

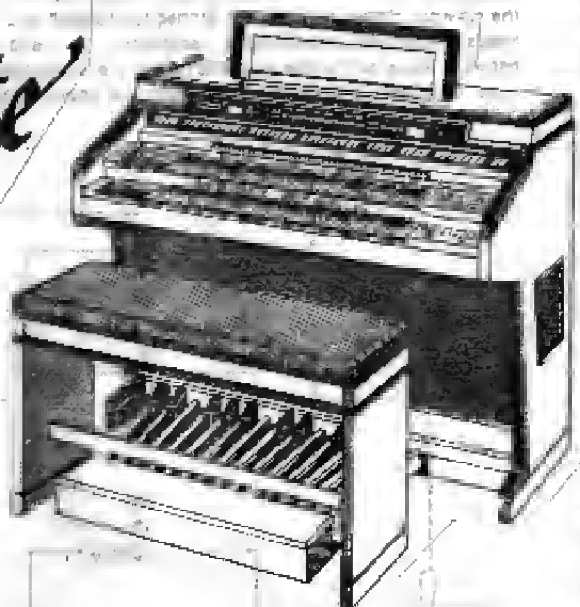
SERVICE MANUAL

Elegante

MODEL NO.

340100

340200



H000-006121

CAUTION

SEE SAFETY NOTICE ON
INSIDE COVER SHEET



HAMMOND ORGAN COMPANY

A DIVISION OF MARMON COMPANY

A MEMBER OF THE MARMON GROUP OF COMPANIES

4200 W. Diversey Avenue

Chicago, Illinois 60639

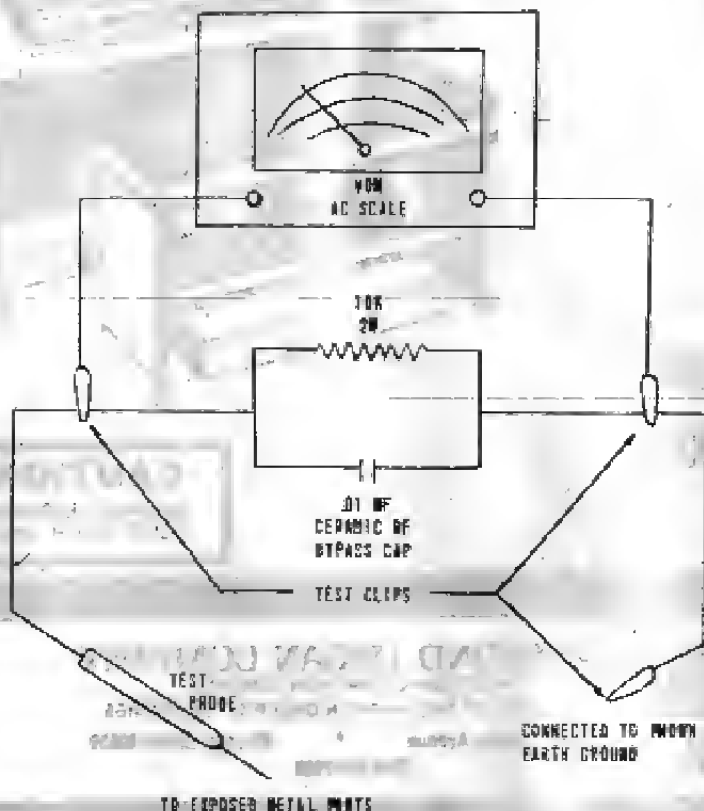
(312) 283-2600

SAFETY NOTICE

Great care has been taken in the design and manufacture of this product to assure that no shock hazard exists on any exposed metal parts. Internal service operations can expose the technician to hazardous line voltages and accidentally cause these voltages to appear on exposed metal parts during repair or reassembly of product components. To prevent this, work on these products should only be performed by those who are thoroughly familiar with the precautions necessary when working on this type of equipment.

To protect the user, it is required that all enclosure parts and safety interlocks be restored to their original condition and the following tests be performed before returning the product to the owner after any service operation.

Plug the AC line cord directly into a line voltage AC receptacle (do not use an isolation transformer for this test) and turn the product on. Connect the network (as shown below) in series with all exposed metal parts and a known earth ground such as a water pipe or conduit. Use an AC VOM of 5,000 ohms per volt or higher sensitivity to measure the voltage drop across the network. Move the network connection to each exposed metal part (metal chassis, screw heads, knobs and control shafts, escutcheon, etc.) and measure the voltage drop across the network. Reverse the line plug and repeat the measurements. Any reading of 4 volts RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the product to the user.



The HAMMOND Elegante—340100

Hammond proudly presents the flagship of the Hammond Organ line...the exciting new ELEGANTE. The ELEGANTE, a new four channel instrument, is truly a unique console organ. Musical creativity and professionalism are blended in the finest tradition of "Hammond Sound"™ with the latest in distinctive features and effects.

The peerless Auto Vari® 64 is totally enhanced with new flexibility and control...a new illuminated rhythm selector panel...Hammond's exclusive Touch Tempo™...a variety of original Rhythm Breaks...even the capability of programming the variation possibilities in limitless combinations.

This exclusive new console features the famous "Hammond Tonebar Sound"™ Hammond's exclusive Melody Maker™ nine deluxe preset pistons, Hammond's Fascinating Fingers™ and even a deluxe Easy Play division. Truly an instrument with unmatched versatility and dependable performance...the ELEGANTE by Hammond.



PRODUCT DATA SHEET

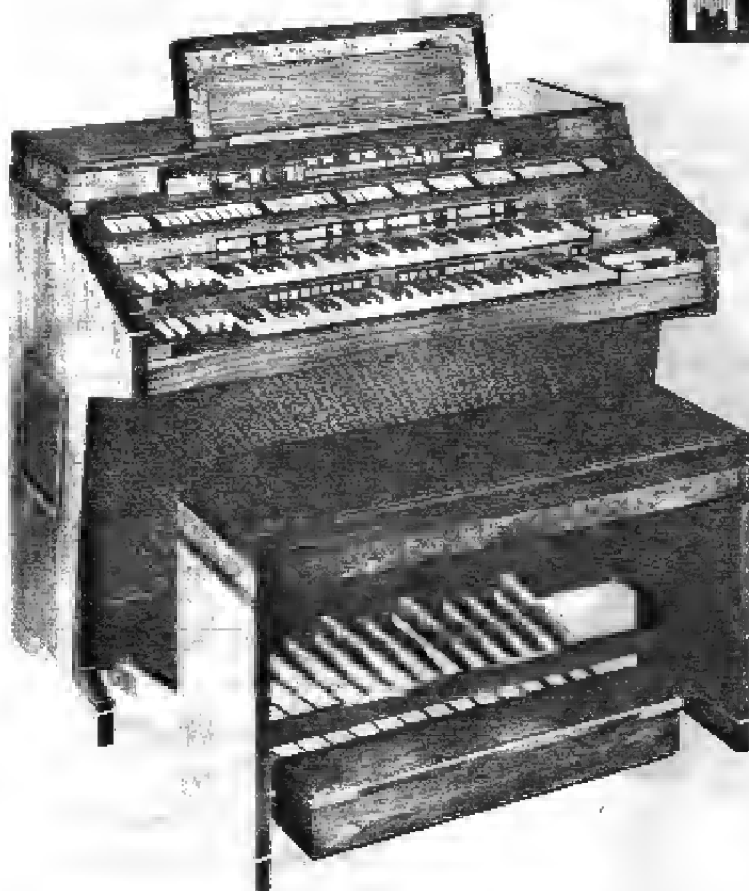
- **Multiplex Synthesis Technology**
- **Two 61-Note Keyboards**
25 Pedals
- **Harmonic Tonebars**
Two sets of 8 Harmonic Tonebars for each keyboard
- **Accents**
Variable Repeat, Key Click, Percussion Fast, Pro Chord™
- **Poly Synthesis Percussion**
1st, 2nd, 3rd, 4th, 5th, 6th, and 8th Harmonics, Vibrato, Twin Mallet Marimba, and Chime Solo
- **Brite Percussion**
Dual Voice, Pizzicato, Banjo, Harpsichord, Honky Tonk Piano, Piano, and Solo Piano
- **Upper Manual Voices**
Tuba 16; Post Horn 2; Clarinet 2; Diapason 2; Violin 4
- **Lower Manual Voices**
Diapason 8; Horn 2; Violina 4
- **Pedals**
16" and 8" Tonebars, Pedal Sustain (variable), Bass Guitar, Pedal Mute, Lower to Pedal
- **Easy Play Group**
Variable Bass Wa™, Memory, Note-A-Chord™ One Finger Chords
- **Autochord™**
- **Auto Vari® 64**
16 rhythms, each with four programmable variations, Measure Selector, Tempo Selector, Volume Selector, Touch Tempo™, Rhythm Break, Continuous/Touch Start, Foot Switch Reset
- **Follow-The-Player-Rhythms**
Bass Drum, Cymbal, Brush, Snare Drum
- **Animation**
Leslie Upper, Leslie Lower, Leslie Reverb, Leslie Chorus, Vibrato On, Vibrato Small, Delayed Vibrato
- **Variable Reverb**
- **Brilliance, Volume Soft**
- **Philharmonic Strings™**
Each manual features 16", 8", and 4" Strings, Variable Attack, Variable Sustain, and Variable Volume
- **Fascinating Fingers**
Patterns: Zig, Single, Up/Down, Strum
Voices: Piano, Zither, Banjo, Cancel, Variable Volume
- **Pro Foot™**
Piano Solo, Dual Voice, Leslie Speed, Rhythm Break, Rhythm Fade
- **Sustain**
Variable Upper Manual, Variable Lower Manual, Variable Pedal
- **Piston Presets**
Nine illuminated presets to register the entire organ
- **Preset Keys**
Eleven reverse preset keys to control flexibility of upper and lower manuals and tonebars
- **Headphone Jack**
- **Speakers**
One 15" Two 8" One 6 1/2" speaker
One 6" x 9" Leslie Rotasonic
- **Power Amplifiers**
2—35 Watt, 2—10 Watt
- **Dimensions**
53 1/2" L, 31 1/2" H (music rack up), 28 1/2" D
- **Weight**
421 pounds, including pedals and bench

The HAMMOND Elegante—340200

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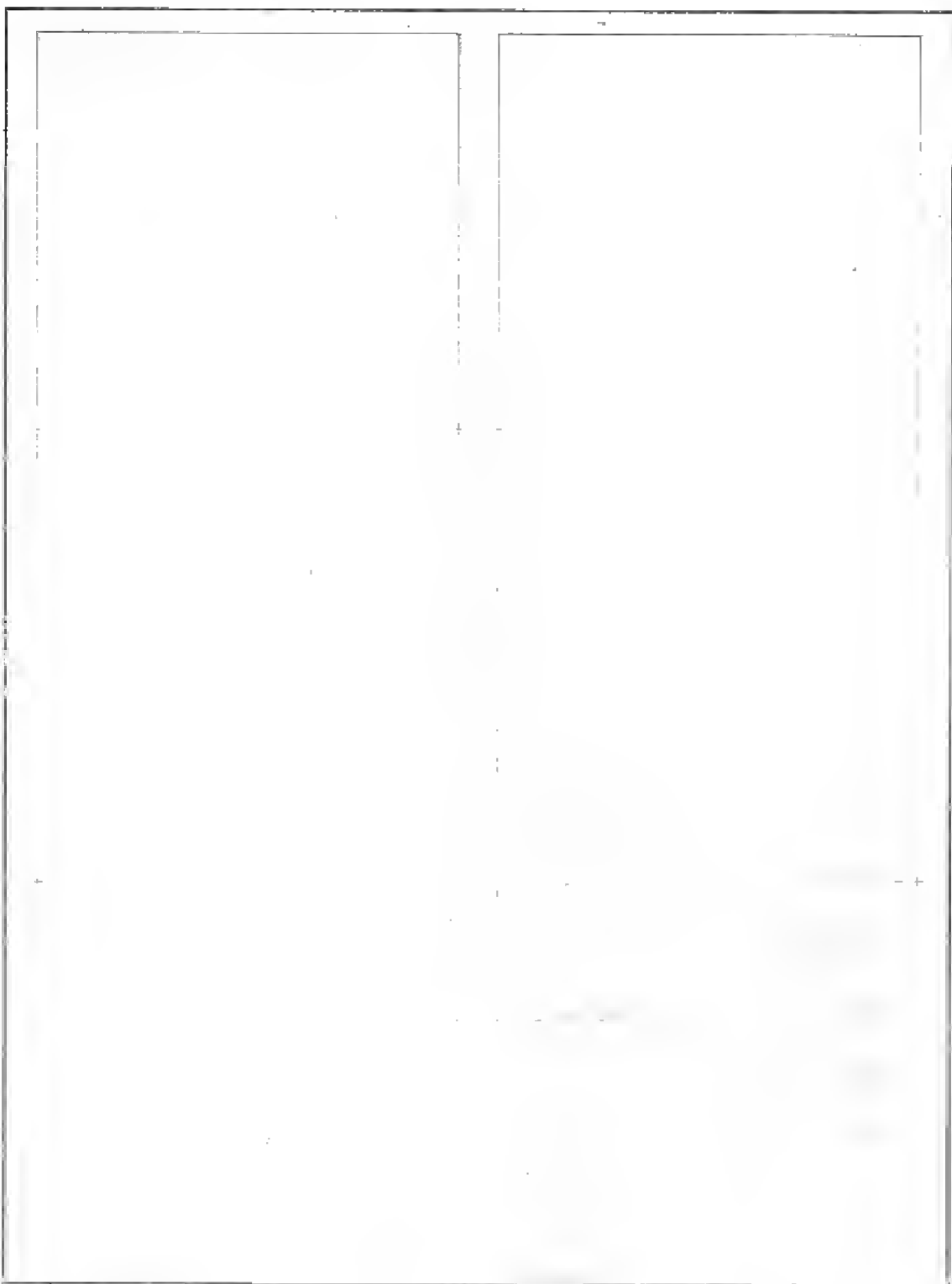


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- **Multiplex Synthesis Technology**
- **Two 61-Note Keyboards**
25 Pedals
- **Harmonic Tonebars**
Two sets of 9 Harmonic Tonebars for each keyboard
- **Accents**
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- **Poly Synthesis Percussion**
1st, 2nd, 3rd, 4th, 5th, 6th, and 8th Harmonics, Vibraphone, Twin Maracas, Maracas, and Chime Solo
- **Brilliant Percussion**
Dual Voice, Pizzicato, Banjo, Harpsichord, Honky Tonk Piano, Piano, and Solo Piano
- **Upper Manual Voices**
Tuba 16', Post Horn 8', Klarnet 8', Disapason 8', Violin 4'
- **Lower Manual Voices**
Disapason 8', Horn 8', Violina 4'
- **Pedals**
16" and 8" Tonebars, Pedal Sustain (variable), Bass Guitar, Pedal Mute, Lower to Pedal
- **Easy Play Group**
Variable Bass Walk, Memory, Note-A-Chord™ One Finger Chords
- **Autochord®**
- **Auto Vari® 64**
16 rhythms each with four programmable variations, Measure Selector, Tempo Selector, Volume Selector, Touch Tempo®, Rhythm Break, Continuous Touch Start, Foot Switch Reset
- **Follow The Player Rhythms**
Bass Drum, Cymbal, Brush, Snare Drum
- **Animation**
Leslie Upper, Leslie Lower, Leslie Reverb, Leslie Chorus, Vibrato On, Vibrato Small, Delayed Vibrato
- **Variable Reverb**
- **Brilliance, Volume Soft**
- **Philharmonic Strings™**
Each manual features 16', 8', and 4' Strings, Movable Attack, Variable Sustain, and Variable Volume
- **Fascinating Fingers™**
Patterns: Zig, Single, Up/Down, Strum
Voices: Piano, Zither, Banjo, Cancel, Variable Volume
- **Pro Foot™**
Piano Solo, Dual Voice, Leslie Speed, Rhythm Break, Rhythm Fade
- **Sustain**
Variable Upper Manual, Variable Lower Manual, Variable Pedal
- **Piston Presets**
Nine illuminated presets to register the entire organ
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Eleven reverse preset keys to control flexibility of upper and lower manuals and tonebars
- **Headphone Jack**
- **Speakers**
One 15" Two 8" One 8 1/4" speaker
One 6" x 9" Leslie Rotasonic
- **Power Amplifiers**
2—35 1/2 Watt, 2—10 Watt
- **Dimensions**
53 1/4" L, 51 1/4" H (music rack up), 28 1/4" D
- **Weight**
441 pounds, including pedals and bench
- **Tone Cabinet Controls**

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SECTION I

HOW THE ORGAN OPERATES

GENERATOR SYSTEM

Tone generation is accomplished by using a six channel 440/Multiplex generator system for melody, accompaniment and pedal voices. The 434/435 LSI system generates the pedal tones in the Base of Play mode while an additional 435 LSI generates the arpeggiator tones. Therefore, the organ has the equivalent of 8 tone generating systems. The multiplex generators are assigned to: (1) Upper Keyboard Synthesis (9 tonebars); (2) Lower Keyboard Synthesis (9 tonebars); (3) Lower String Ensemble and Tab Voices; (4) Brute or Synthesis Percussion; (5) Upper String Ensemble, Synthesizer Voices, and Tab Voices; and (6) Pedal Voices.

Instead of using "Second Voices" on this organ, five "full time" tab voices on the upper keyboard and three on the lower keyboard are used. The upper keyboard voices are TUBA 16', POST HORN 8', KINURA 8', and VIOLIN 4'. The lower keyboard voices are DIAPASON 8', HORN 8', and VIOLINA 4'. As implied in the "full time" description they will add to all other voices.

In order to make the organ as easy to play as possible, it has been necessary to establish some priorities for the Upper, Lower and Pedals. They are as follows:

1. UPPER KEYBOARD

- a. Tonebar tones and/or reverse color preset voices play except when solo presets, or PISTONS are activated.
- b. Brute percussion has priority over synthesis percussion except for CRUME SOLO.
- c. String Ensemble adds to all upper keyboard divisions except the solo presets and reverse color presets.
- d. Synthesizer voices add to all upper keyboard divisions except solo presets and reverse color presets.
- e. Tab voices add to each other and all upper divisions except solo presets and reverse color presets.
- f. Upper keyboard SUSTAIN is simultaneously applied to tonebar synthesis, string ensemble, and tab voices.
- g. CRUME SOLO has priority over all upper divisions except PIANO SOLO.
- h. PIANO SOLO has priority over all upper divisions except PISTONS.
- i. Organ PISTONS have priority over all upper keyboard divisions.

2. LOWER KEYBOARD

- a. STRING ENSEMBLE adds to tonebar tones and tab voices.
- b. SUSTAIN can be applied to String Ensemble, Synthesis tones and tab voices.
- c. PISTONS have priority over String Ensemble and synthesis tonebars, tab voices and reverse color presets.

3. PEDALS

- a. 16' and 8' pedal tonebars add to each other.
- b. BASS GUITAR adds to both tonebar tones.
- c. PEDAL SUSTAIN effects 16' and 8' pedal pitches and coupled lower keyboard tones.
- d. PISTONS have priority over all pedal voices.
- e. LOWER TO PEDAL coupler functions at all times.

REVERSE COLOR PRESETS

The 340 incorporates the Hammond reverse color keyboard presets on both upper and lower keyboards. As in the past, this feature provides for 9 preset division voices, 2 programmable division presets and a cancel key on each keyboard.

The specific voices used on the 9 preset voices on upper and lower keyboards are summarized in Table 1.

PISTONS

Nine combination PISTONS provide the selective performance shown in Table 2. The pistons are controlled by nine lighted momentary push buttons and a cancel button (not lighted) mounted in the front strip to the left of the Arpeggiator controls. The buttons are white and are marked 1 thru 9 and C (cancel).

PERCUSSION DIVISIONS

The upper keyboard has provision for both synthesis and brite percussion. The synthesis group includes 1st, 2nd, 3rd, 4th, 5th, 6th and 8th harmonics, VIBRAHARP, TWIN Mallet MARIMBA and CHIME SOLO. The brite group includes five percussion voices. These are PIANO, HONKY TONK PIANO, MARPSICHORD, BANJO and PIZZICATO. In addition, a PIANO SOLO preset is provided which cancels all upper keyboard voices.

A REPEAT tab and variable rate slider which effects all voices in these divisions except the solo presets is provided. The repeat rate range is from 2 to 17Hz.

The KEY CLACK feature provided on this model effects only tonebar tones on both keyboards and percussion harmonic tones on the upper keyboard.

To provide for balancing percussion voices against the other divisions of the organ a volume control is incorporated on the tonebar base.

A new DUAL VOICES feature is incorporated into the brite percussion. When this tab is operated it turns on (couples) both 16' and 8' pitches and turns off the 8' pitch. It is controllable by either the control panel tab or the programmable foot switch on the expression pedal.

PRO CHORD is also incorporated in this division. This feature is available at all times. With this tab depressed, any lower keyboard note (chords) played will automatically key, at a lesser volume, the corresponding notes on the upper keyboard above the note(s) played on the upper. This feature operates from A1 to G#5 on the upper keyboard for a total of 48 keys.

PEDALS

The pedal bass has three additive voices - 16' and 8' tonebars and BASS GUITAR. In the normal playing mode pedals perform polyphonically. The pedals have priority over AUTOCHORD or BASS WALK modes of automatic pedal playing. For example, if the player is in the BASS WALK mode and desires to inject his own bass pattern or legato pedal, he may simply play pedals in the normal manner.

The automatic bass line will be canceled and the pedals will sound with the voices set up on the tonebars or tabs. On release of the pedal the automatic bass again sounds at the start of the next programmed bass note as determined by the rhythm unit tempo.

Sustain and tone quality are controlled by a PEDAL SUSTAIN tab with a variable slider and a PEDAL MUTE tab. In addition lower voices may be keyed by the pedals with the LOWER TO PEDAL tab.

STRING ENSEMBLE

This model has a full complement of string voices called **PHILHARMONIC STRINGS®**. The controls are mounted in the upper right-hand endblock. The string voices consist of three pitches (16', 8' and 4') on the upper keyboard and three pitches (16', 8' and 4') on the lower. Independent controls for string **ATTACK**, **SUSTAIN**, and **VOLUME** are provided for each keyboard. Separate rocker tab controls have been provided to turn **SUSTAIN** "on". This allows the player to preset the amount of this effect. The **SUSTAIN** controls on this endblock also control the degree of sustain on other voices as noted earlier under priorities. The **BRILLIANCE** tab will effect the strings.

In order to achieve optimum performance of the String Ensemble group, three channel acoustic mix is used.

SYNTHESIZER VOICES

Mounted in the lower right-hand endblock are nine momentary rocker tabs (**SAX**, **CLARINET**, **TROMBONE**, **ORGE**, **TRUMPET**, **ACCORDION**, **HAWAIIAN GUITAR**, **DO-WAH** and **NOVELTY**), each with its own LED indicator. These voices are controlled by a **VOLUME** slider pot and **CANCEL** momentary push-button also mounted in the endblock. This feature is called **MELODY MAKERS®**.

EASE OF PLAY

This organ utilizes the full Ease of Play chord recognition capability of the 434/435 LSI system to provide true root/fifth **AUTOCHORD®**, **ONE-FINGER CHORD**, **MEMORY** and **BASS WALK**. In addition, visual keyboard memory is provided by **NOTE-A-CHORD®**.

The **ONE-FINGER CHORD** tab, when activated, converts twenty lower keyboard notes (C2 through G3) to twenty, three note chords (C through Gm) as indicated on the chord strip, and activates the appropriate pedal tone.

The same twenty notes that function with the **ONE-FINGER CHORD** tab also work with the **MEMORY** tab. In the **MEMORY** mode of operation, note(s) continue to play after the key(s) have been released. Both an audio and visual memory is accomplished with the **NOTE-A-CHORD®** tab. This tab works on C2 through B3 keys. When activated, keys remain depressed and playing, after the player has let go.

With **SILENT/SOUND** in the sound position and **AUTOCHORD®** "on", the organ is in the Ease of Play mode which automatically chops the lower tab voices and pedals. **BASS SWING** - **BASS WALK** tab is functional in this mode only. **BASS SWING** creates an alternating root/fifth pedal pattern when either **ONE-FINGER CHORD** is depressed and a key held or when a three, or more note, chord is played. The organ recognizes the chord and plays the appropriate root/fifth pedals. **BASS WALK** plays a sequenced pattern of pedal notes depending on the chord played and rhythm selected. The pedal pattern continues even when the keys are released. **WALTZ**, **MARCH 6/8**, **BLUES**, **MARCH 4/4** and **DISCO** rhythms are not programmed for **BASS WALK**.

AUTOMATIC ARPEGGIATOR

Located to the right of the pistons in the front strip are eight momentary push-buttons, seven of which are lighted, called FASCINATING FINGERS®. The first four red push-buttons from left to right control the sequence of the arpeggio, either ZIG, SINGLE UP, UP/DOWN or STRUM. The next three yellow buttons to the right are the voices (PIANO, ZITHER, and BANJO) which arpeggiate. They can be used singly or in combination. The last push-button (CANCEL) is not lighted and cancels both mode and voice buttons. Also mounted in the front strip is a volume control to balance this section with other keyboard voices.

RHYTHM

This organ incorporates an AUTO VARI® 64-(PRO) rhythm unit which has all the features of an AUTO VARI® 64 plus TOUCH TEMPO, RHYTHM BREAK, RHYTHM FADE and PROGRAMMABLE VARIATIONS. The complete operation of this rhythm unit is explained in the following paragraphs.

PATTERNS

The sixteen patterns (WALTZ thru TANGO) in this unit are momentary push-buttons that light when on. Two or more rhythms can be activated at the same time.

In addition to the sixteen patterns there are four "follow the player" voices; BASS DRUM, CYMBAL, BRUSH and SNARE DRUM. The first two are activated by depressing a pedal while the second two are keyed by the lower keyboard. These voices function only when the rhythm unit is not running.

VARIATIONS

There are four VARIATIONS (A,B,C and D) for each of the sixteen patterns. The VARIATIONS are controlled by the AUTO-VARI, PROGRAM and MEASURE switches. Any one of the four VARIATIONS of a rhythm pattern may be selected simply by depressing the desired push-button. The AUTO-VARI switch, when activated, automatically changes the VARIATION of the pattern, either in a fixed sequence of A,B,C,D,A...(PROGRAM switch "off") or a programmed sequence (PROGRAM switch "on"). The rate in which the VARIATIONS advance is determined by the MEASURE position selected. Programming of the VARIATIONS is accomplished by turning "on" PROGRAM, with AUTO-VARI "off" and depressing any combination of VARIATION buttons, up to a maximum of sixteen. Turning "on" the AUTO-VARI switch then activates the sequence. The sequence is reset to A,B,C,D when the PROGRAM switch is turned "off".

SILENT SOUND / TOUCH TEMPO

This "touch pad", as its name implies, has two modes of operation. In the SILENT SOUND mode, when the TOUCH TEMPO® push-button is "off" (not lighted), "tap" the pad once for the rhythm to sound and once again to silence the pattern. The speed in this mode is determined by the TEMPO slider position. The TOUCH TEMPO® mode of operation is activated when the amber TOUCH TEMPO® button is "on" (lighted). Tap the pad four times to program the speed and once again to start the rhythm. During the first three taps the red indicator is lit. The fourth tap lights the green indicator and cancels the red. While the rhythm is running the green light is "on", in either mode.

The SILENT SOUND / TOUCH TEMPO pad functions as just described unless the CONTINUOUS TOUCH START switch is in the TOUCH START mode. In this mode, the pattern voices are activated when a lower key or pedal is depressed and continues to sound until they are turned "off" by the TOUCH TEMPO® pad.

Another way to silence the rhythm unit is by means of a foot switch mounted on the right side of the expression pedal. Activating the foot switch silences the voices as long as the switch is held. Upon releasing the switch the voices return in tempo unless the FOOT SWITCH RESET is "on", then they will begin on beat 1 of MEASURE 1 of VARIATION A or the first programmed VARIATION.

RHYTHM FADE

Activating the FADE switch once causes the rhythm volume to gradually become inaudible (approximately 10 seconds). To return to the level set by the VOLUME pot operate the FADE switch again or perform a Stop/Start cycle. This feature may also be activated by the PRO FOOT® switch.

RHYTHM BREAK

There are six breaks assigned to twelve specific rhythm patterns. The break assignments are shown in Table 3. A RHYTHM BREAK is initiated by touching the break pad at any time when one of the patterns with an assigned break is playing. The amount (number of beats) of break that one hears is determined by the time of initiation.

If the break is triggered at the start of measure one beat one, two full measures of the break will play. If the break is triggered at any time after beat one measure one, only the remaining period of the two measure cycle will play. This musical logic was established to prevent the break from getting out of step with the basic pattern. However, it also permits the player to do creative drum fills with 2 or 3 beat (etc.) breaks.

If the break is triggered when AUTOCHORD® with MEMORY is on, the lower keyboard and pedal will go silent. However, if one is holding any lower keys, the notes will sound. After the break, the player must restore memory by playing the lower keyboard if he wishes to hear lower and pedal in AUTOCHORD Mode.

A break may be played as an introduction simply by touching the break pad before starting the rhythm pattern with the SILENT/SOUND pad.

This feature may also be selectively triggered by the PRO FOOT switch mounted on the left hand side of the expression pedal.

Located to the right of the VOLUME and TEMPO sliders are two switches labeled AUTOCHORD® and SUSTAIN CHORD. Activating the AUTOCHORD® switch, with the rhythm unit running, will cause the lower keyboard tab voices and pedals to sound rhythmically with the pattern enabled. Turning "on" SUSTAIN CHORD allows the pedals to continue in the AUTOCHORD® mode while the chords remain constant.

TRANSPOSER

The TRANSPOSER control section is located in the upper left-hand endblock. The transposer features a transposition range of two half steps up and four half steps down. Control means is achieved by seven miniature momentary lighted push-buttons. The organ powers up in the 0 position lighting the green LED.

PROGRAMMABLE SWITCH

Two foot controlled switches are incorporated on the swell pedal. As on other Hammond products the right hand switch controls the rhythm unit to provide for foot control of "cancel" or "reset" modes of operation. Since the auto arpeggiator runs off the rhythm unit clock, it can also be controlled by the right hand foot switch.

The left hand foot switch is designed to be programmable to select one of five functions. The function options are FLANO SOLO, DUAL VOICE®, LESLIE SPEED, RHYTHM FADE and RHYTHM BREAK. The programmable selector switches are push type and located in the lower left hand endblock. This feature is called PRO FOOT®.

REVERBERATION

A Type IX Reverb Unit is used to provide this feature. The degree of REVERB is controlled by a slider pot mounted on the tonebar base. An additional control tab is provided in the Leslie® animation group to permit the LESLIE ON REVERB effect to be obtained at the player's option. In this mode of playing some main channel signal is sampled by the reverb system. Therefore, some of the "dry" organ voices have some degree of Leslie® animation.

ANIMATION

This model incorporates a two speed Leslie® Rotosonic unit. The organ also provides for keyboard separation so that upper and lower keyboards may be independently animated by the Leslie®.

The percussion divisions, synthesizer instruments, pedals and rhythm voices are channeled only through the main amplifier so that they are always "dry" with respect to Leslie® animation.

After vibrato is also available in two depths and delayed. It affects all organ voices except rhythm voices, brite percussion, harmonic percussion, and pedals.

A tone cabinet output socket is incorporated in the organ to accept the Leslie 11 pin plug used on the self-powered series of tone cabinets.

The third and fourth audio channels, which are used exclusively for String Ensemble are not animated by the Leslie or after vibrato. Since the tone cabinet and headphone outputs feed two channel devices, the organ provides for electrical mix of the String Ensemble in these accessories. A switch is provided next to the tone cabinet plug, which permits acoustic mix for a 4 channel tone cabinet system.

AUDIO SYSTEM

The basic audio system consists of two 10 watt and two 35 watt amplifiers. One 35 watt unit is dedicated to the main "dry" channel, while the other powers the Leslie channel. The 10 watt amplifiers are dedicated to amplifying the String Ensemble channels.

The speaker complement consists of a 15 inch Woofer and 6" Tweeter in the main channel; an 6X9 inch V-13 Leslie® speaker; and an 8 inch speaker in each of the String Ensemble channels.

AUXILIARY CONNECTIONS

Provisions are made for an auxiliary audio input and headphones. Both of these connections are made by 1/4 inch phone jacks. The headphone jack is located under the organ shelf on the right side of the organ, while the auxiliary input circuit is under expression and designed to have an impedance of 47,000 ohms and produce full output with a 1/4 volt signal.

The headphone jack is wired to perform properly with either mono or stereo phones without adapters. All organ speakers go silent when the phone plug is connected.

LIGHTING

In addition to lighted controls in several areas, the 340 incorporates a music desk light and control panel light. Lights are controlled by a switch mounted on the rhythm control panel. However, the organ power ON/OFF switch will control all the line power to the organ. Therefore, the lights can not be turned "ON" unless the organ is "ON". A pedal light with its own switch is also provided.

TABLE 1

REVERSE COLOR MANUAL PRESETSUPPER KEYBOARD

C - Cancel
 C# - Glockenspiel/Sub Fund. 2nd and 5th Harmonics.
 D - Tibias 8' & 2'/(008408004).
 D# - Theatre Tuba/(008000000), Tibia 16'
 E - Novel Solo 8'/(088800880).
 F - Tibia Solo/(830000048).
 F# - Kinura 8' Tibia 4' (000800000).
 G - Full Tibias 16'/(608807006).
 G# - Theater Ensemble/(808808008), 16', 8', 4' Strings, 1/2 Vol.
 A - Hammond Sound/(768878667).
 A# - Adjust (1st group Tonebars).
 B - Adjust and Percussion (2nd group Tonebars).

LOWER KEYBOARD

C - Cancel
 C# - Music Box/000800004), Full Sustain.
 D - Harp/(008000000), Full Sustain.
 D# - Flute - String Chorus 4'/(000806003), 4' String.
 E - Open diapason 8'/(005642200).
 F - Accompaniment 8'/(007222222).
 F# - Flute-String Chorus 8'/(008603000), 8' String.
 G - Full Accompaniment 8'/(007656311).
 G# - Tibia 8'/(008020000).
 A - Bombarde 16'/(947767666).
 A# - Adjust (1st group Tonebars).
 B - Adjust (2nd group Tonebars).

TABLE 2
340 COMBINATION PISTONS

<u>PRESET</u>	<u>UPPER KEYBOARD</u>	<u>LOWER KEYBOARD</u>	<u>PEDALS</u>
#1	Vibraharp Maximum Sustain Leslie, Slow	003200000 Leslie	43
#2	8' String (Approx. 1/2 Vol.) 000800000 (Approx. 1/3 Sus.) Leslie, Fast	004400020 Leslie	64
#3	888000000 3rd Harmonic Leslie, Slow	006442000 Leslie	08
#4	808806008 Leslie, Fast	008855000 Leslie	86
#5	858858558 16', 8', 4' Strings (Full Vol.) Leslie, Fast	8', 4' Strings (Full Vol.) 008806004 Leslie	86
#6	808808000 Leslie Fast Post Horn Déapason Vibrate Optional	08703000 Leslie Horn Violina	78
#7	16', 8', 4' Strings (Full Volume)	8', 4' Strings (3/4 Volume)	66
#8	808808880 Leslie, Slow	008603003 Leslie	83
#9	Cancels everything except Melody Maker. If no Melody voice is selected, selects Sax, but can be changed to others while any other presets are on.	006400000 Leslie Slow 4' String (1/4 Volume)	56

- Notes:
- a) CANCEL returns organ to normal tab and conebar operation.
 - b) All String Ensemble settings will be with SUSTAIN Off.
 - c) Percussion Voices, Tab Voices, MELODY MAKER, Animation, Tonebars, PIANO SOLO and CHIME SOLO will not operate in any of the PISTON positions except as noted above.
 - d) PISTONS will not affect PEDAL NOTE, PEDAL SUSTAIN, LOWER TO PEDAL coupler, Reverb, Rhythm, MEMORY, VOLUME SOFT, BRILLIANCE and Easy Play features.
 - e) KEYCLICK is optional on PISTON 3 only.

TABLE 3
RHYTHM BREAK ASSIGNMENTS

<u>BREAK</u>	<u>PATTERN USE</u>
1	DISCO, CHA-CHA
2	MARCH 4/4 POLKA, DIXIELAND
3	WESTERN/SHUFFLE, JAZZ
4	SAMBA, BOSSA NOVA, RHUMBA/REGUINE, TANGO
5	BALLAD
6	HARD ROCK
None	WALTZ, MARCH 6/8, BLUES ROCK, LIVERPOOL

Model: 340200

GENERAL

The Model 340200 organ operates in the same manner as the Model 340100 previously described, with the exception of a change in the ANIMATION section and the addition of a TONE CABINET CONTROL section.

ANIMATION

The Model 340200 tone cabinet plug provides for four channel cabinets. Therefore, the electrical mix switch described previously has been removed. All other operations in Model 340100 ANIMATION section apply.

TONE CABINET CONTROL

Located in the front strip on the right side are two momentary lighted push-buttons labeled MAIN OFF and ECHO ON. These switches function as their names imply (MAIN being the organ and ECHO a separate tone cabinet) provided a tone cabinet is connected.

SECTION III

DISASSEMBLY PROCEDURE

TO REMOVE REAR COVER:

- 1) Disconnect organ from A.C. line voltage source.
- 2) Remove ten 5/16" hex head screws from rear cover. Pull the cover gently away from organ.

TO REMOVE TOP PANEL ASSEMBLY:

- 1) Follow steps to remove rear cover.
- 2) Remove two 1/4" hex head screws that secure the swing panel, as shown in Figure A, Number 1.
- 3) Fold down the swing panel, as shown in Figure A, Number 2.
- 4) Support swing panel, in down position, by attaching nylon cord to bracket, as shown in Figure A, Number 3.
- 5) Disconnect music lights by unplugging P1, located underneath the top panel assembly, as shown in Figure B, Number 1.
- 6) Remove two 1/4" hex head screws from both right and left sides of the top rail, as shown in Figure B, Number 2.
- 7) Reach in from the rear of the organ and release the latch on both right and left sides of the organ, as shown in Figure B, Number 3.
- 8) Gently lift the top panel up and away from the organ.

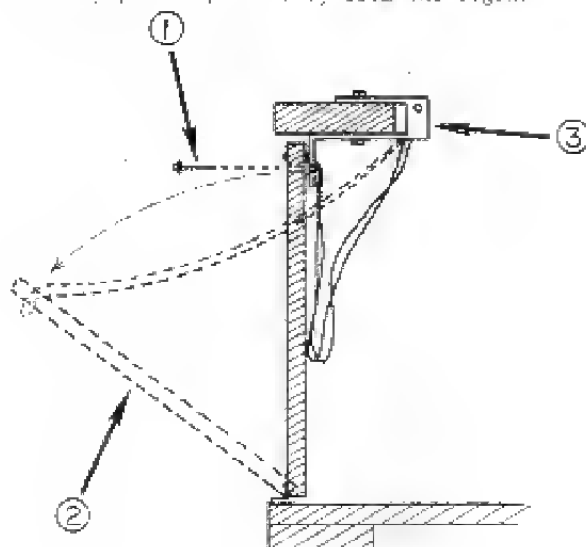


FIGURE A

TO SWING BACK RHYTHM UNIT:

- 1) Follow steps to remove top panel assembly.
- 2) Remove two 1/4" hex head screws that secure the unit to the support angle, as shown in Figure C, Number 1.
- 3) Gently pivot rhythm unit back until it rests on the top rail, as shown in Figure C, Number 2.

NOTE: CAUTION SHOULD BE TAKEN TO PREVENT EXCESSIVE TENSION ON THE WIRING.

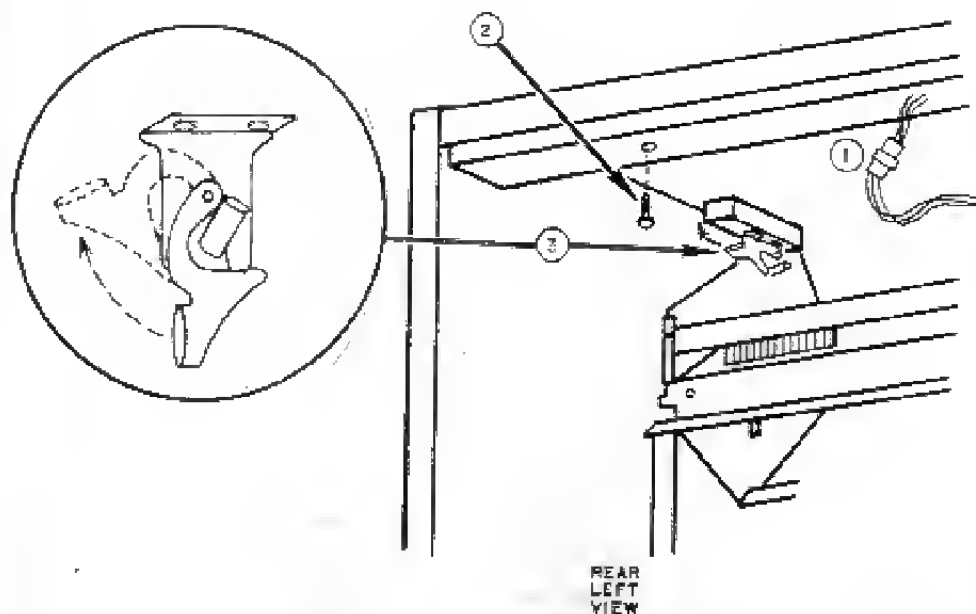


FIGURE B

TO SWING BACK CONTROL PANEL ASSEMBLY:

- 1) Follow steps to swing back rhythm unit.
- 2) Remove two 1/4" hex head screws from right and left side brackets, as shown in Figure D, Number 1.
- 3) Grasp the control panel at each end from the front of the organ and tilt backwards, as shown in Figure D, Number 2.

CAUTION: THE CONTROL PANEL MUST BE FIRMLY SECURED WHEN PLACED IN THE UPRIGHT POSITION, OTHERWISE IT MAY FALL, CAUSING DAMAGE TO ORGAN PARTS OR PERSONAL INJURY.

TO SWING BACK UPPER MANUAL ASSEMBLY:

- 1) Follow steps to swing back control panel assembly.
- 2) Remove two 7/16" hex head bolts from underneath the organ shelf, as shown in Figure E, Number 1.
- 3) Grasp the upper manual at each end from the front of the organ and tilt backwards, as shown in Figure D, Number 3.

CAUTION: THE UPPER MANUAL MUST BE FIRMLY SECURED WHEN PLACED IN THE UPRIGHT POSITION, OTHERWISE IT MAY FALL, CAUSING DAMAGE TO ORGAN PARTS OR PERSONAL INJURY.

TO SWING BACK LOWER MANUAL ASSEMBLY:

- 1) Follow steps to swing back upper manual assembly.
- 2) Remove two 3/8" hex head bolts from underneath the organ shelf, as shown in Figure E, Number 2.
- 3) Grasp the lower manual at each end from the front of the organ and tilt backwards, as shown in Figure D, Number 4.

CAUTION: THE LOWER MANUAL MUST BE FIRMLY SECURED WHEN PLACED IN THE UPRIGHT POSITION, OTHERWISE IT MAY FALL, CAUSING DAMAGE TO ORGAN PARTS OR PERSONAL INJURY.

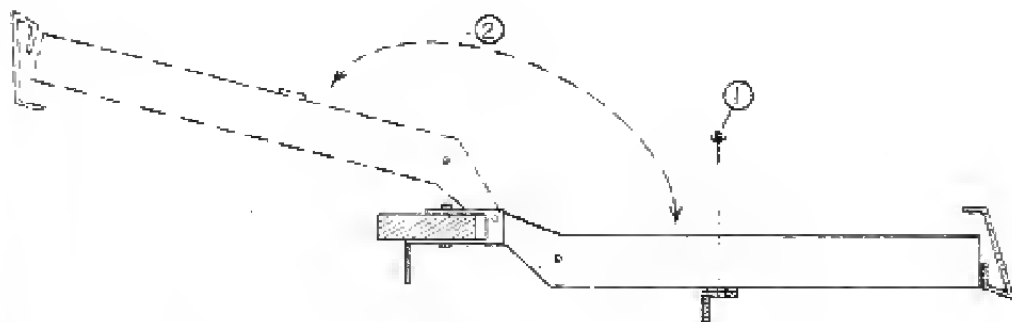


FIGURE C

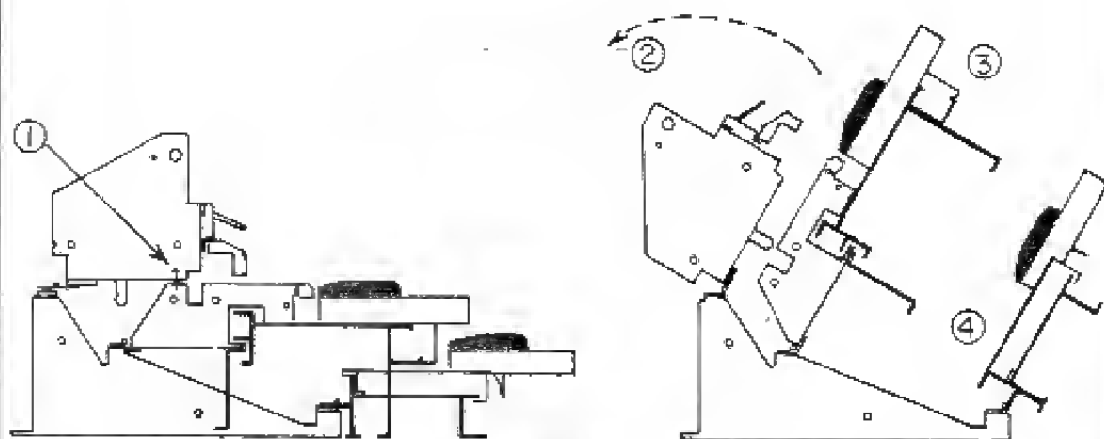
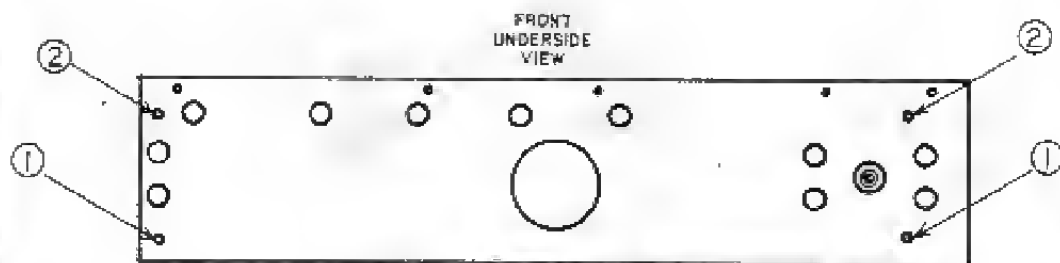


FIGURE D



FRONT
UNDERSIDE
VIEW

GRILL

FIGURE E

TO REMOVE PEDAL SWITCH ASSEMBLY:

- 1) Follow steps to remove rear cover.
- 2) Loosen pedal cable and unplug pedal switch chassis ground wire from terminal strip to provide slack necessary for the removal of the pedal switch assembly.
- 3) Insert a screwdriver between the pedal switch chassis and bottom support rail. Gently pry the pedal switch upward to unlock the studs on the pedal switch from the support rail, as shown in Figure F, Number 1.
- 4) When the pedal switch assembly is unlocked from the support rail, grasp the assembly and carefully pull it away from the organ, releasing the pedal switch studs from the rear locks on the support rail, as shown in Figure F, Number 2.
- 5) To service the pedal switch it may be necessary to unplug the pedal cable from the switch assembly and remove it from the organ. To reconnect the pedal cable to the switch assembly, as viewed from the front of the organ, plug P552 is connected to the right plug and P553 is connected to the plug on the left.

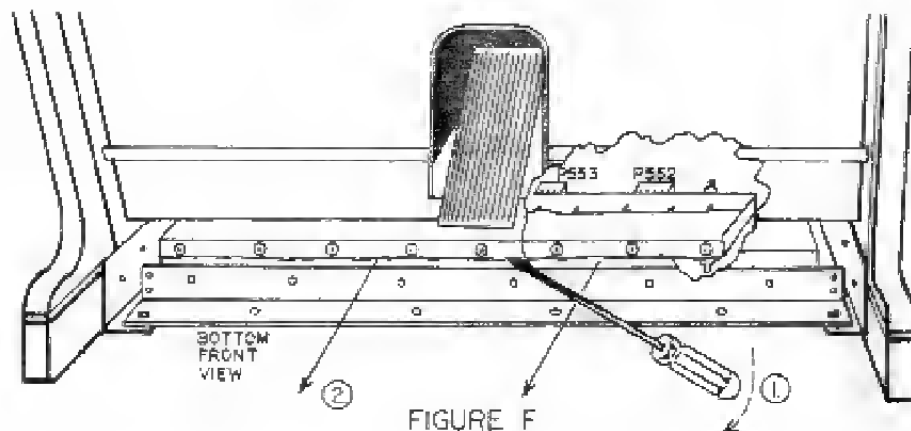


FIGURE F

SECTION IV

TEST AND ADJUSTMENT PROCEDURE

TEST AND ADJUSTMENT PROCEDURE

MODEL 340100

STEP	TITLE OF TEST	SETUP PROCEDURE (FABS DEPRESSED) (TONESARS ON)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
1	Vibrato & Freq. Adj.	a) None b) Delayed Vibrato c) Vibrato ON	b) UKB Any Key	a) Freq. Counter b) Scope .25/div c) Freq. Counter	a) J543-4 124-517 b) Amplifier Q1 124-645 c) J586-10	a) Tuning Coil 124-538 b) R132 124-645 c) R308 124-645	a) 3136 \pm 4Hz b) .8 sec. 90% of Full Vibrato c) 152 ms
2	Main Level	Maximum Sw. Pedal UKB TB's 008808008 Brilliance	UKB 25,29,32	RMS VM 10V	Main Speaker	R33 124-644	3.5V RMS
3	Minimum Swell	UKB TB's 008808008 Brilliance	UKB 25,29,32	RMS VM 300mV	Main Speaker	R126 124-644	110 mV RMS
4	LKB Level	LKB TB's 008808008 Brilliance	LKB 25,29,32	RMS VM 10V	Main Speaker	R131 124-645	3.5RMS
5	Leslie Level	Max Swell Pedal UKB TB's 008808008 Brilliance	UKB 25,29,32	RMS VM 10V	Leslie Speaker	R68 124-644	5.0V RMS
6	Vibrato Level	UKB TB's 008808008 Brilliance Vibrato On	UKB 25,29,32	RMS VM 10V	Main Speaker	R103 124-645	3.5V RMS
7	Bright Voices	a) UKB A# PR Tuba Post Horn Kinura Diapason Violin b) LKB A# PR Diapason Horn Violins	a) UKB 25,29,32 b) LKB 25,29,32		a) Main Speaker b) R77 124-538	a) R45 124-533 b) R77 124-538	a) 3.0V RMS b) 2.2V RMS
8	Pedal Level	Pedal TB's 16" and 8"	Pedal 13	RMS VM 10V	Main Speaker	R76 124-631	8.0V RMS

TEST AND ADJUSTMENT PROCEDURE

MODEL 340100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
9	Percussion Level	Piano Solo Perc Volume Pot at Maximum	UKB 25	Scope 5V/Div	Main Speaker	R1 124-632	24V P-P
10	Synthesis Perc Levels	Repeat Repeat Pot at Max a) 2nd Harmonic b) Vibraharp c) 8th Harmonic Perc fast tab	a) UKB 25 c) UKB 61 in slow staccato manner	a) RMS VM 3V b) Scope 50 ms/Div	a) Main Speaker b) J770-10	a) R39 124-632 b) R226 124-611 c) R46 124-632	a) 2.1V RMS b) 222 ms c) Adjust for Minimum thump
11	Philharmonic Strings	a) UKB 8' String LKB Volume Pot at maximum Brilliance b) Same as "a" c) Same as "a" d) LKB 8' String LKB Volume pot at maximum e,f,g) None h) UKB 4' String Attack Pot at min position i) LKB 4' String Attack pot at min. position	a,b,c) UKB 25,29,22 d) LKB 25,29,32 e,f,g) None h) UKB 61 rapidly i) LKB 61 rapidly	a,b,c,d) RMS VM 1V e,f,g) Scope 2 us/div h,i) None	a) Main Speaker b) Spkr above the sw pedal c) Spkr on the left side of the console d) Main Speaker e) IC9 Pin 2 f) IC7 Pin 2 g) IC 11 Pin 2	a) R54 124-634 b) R122 124-644 c) R48 124-546 d) R63 124-634 e) R163 124-634 f) R156 124-634 g) R141 124-634 h) R51 124-634 i) R50 124-634	a) 1V RMS b) 1V RMS c) 1V RMS d) 1V RMS e) 6 us f) 6 us g) 6 us h) Adj. for minimum thump i) Adj. for minimum thump

TEST AND ADJUSTMENT PROCEDURE

MODEL 340100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TOREBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
12	Reverb	UKB TB's 000607080 Les Upper Reverb pot at Max Brilliance	UKB 25,26,27 29,29	RMS VM 3V	Main Speaker	R24 124-5P2	1.6V RMS
13	Melody	Melody Maker Volume pot at maximum a) Novelty b) Saxophone c) Accordion d) Clarinet e) Trombone f) Oboe g) Trumpet h) Accordion i) Hawaiian Guitar j) Do-Wah k) Novelty	a) UKB 37 b) UKB 25,29,32 c-k) UKB 25,29,32	a) Scope b) RMS VM 3V c) Scope .2s/div c-k) RMS VM	a-k) Main Speaker	a) Bias R144 124-561 b) R200 124-561 c) R161 124-561	a) Adjust for resonance. This point is defined as the point of purest flute-like tone (no harmonics and maximum output voltage) b) 2.8V RMS c) Adjust if necessary for 90% max amplitude in 100 ms Attack Time. d) 1.43 - 2.97V RMS e) 2.28 - 4.78V RMS f) 0.98 - 2.03V RMS g) 2.08 - 4.32V RMS h) 2.08 - 4.32V RMS i) 1.43 - 2.97V RMS j) 1.63 - 3.38V RMS k) 1.04 - 2.16V RMS
14	Key Click	Key Click tab ON Connect -14V to J536-13 and -14V to the positive side of C11 on the 124-523 PCB. Draw any TB out to Position 1	UKB - Any key re- peatedly	Scope 2V/div	Main Speaker	R33 124-523	4V P-P

TEST AND ADJUSTMENT PROCEDURE

MODEL 340100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
15	Fascinating Fingers	Fascinating Fingers volume pot at maximum. Rhythm Unit tempo at maximum. Strum button ON. a) Piano b) Zither c) Banjo	a,b,c) LKB 13	a,b,c) RMS VM	a,b,c) Main Speaker		a) 3.9 - 8.1V RMS b) 0.39 - 0.81V RMS c) 0.65 - 1.35V RMS
16	Feedthrough Adjustment	Blue tab #5	UXB 26			R2 124-595	Adjust R2 for purest tone
17	Rhythm Unit	<u>MASTER CLOCK</u> a) Unplug J57. Connect jumper from the collector of Q30 to the right side of C30 (as viewed from front of organ) Rhythm Unit Volume Pot at maximum.	a) None	a) Freq Counter	a) Main Speaker	a) R184 in Rhythm Unit	a) 2708Hz
		b) Cymbal c) Bass Drum d) Snare Drum e) Brush f) Silence/Sound	b,c) Any Pedal d,e) Any LKB	b,c) Scope 5V/DIV	b,c) Main Speaker	b) R300 in Rhythm Unit c) R251 in Rhythm Unit d) R168	b) 20V P-P c) 45V P-P d) Note the Snare Drum sound e) Note proper Brush sound f) Adjust for minimum audible thump

TEST AND ADJUSTMENT PROCEDURE

MODEL 340100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS ON)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
15	Hum & Noise	Leslie Chorus					
		a) "A" Network In		a) RMS VM	Main Speaker		a) 5mV Min Swell 10mV Max Swell
		b) "A" Network Out		b) RMS VM	Main Speaker		b) 25mV Max Swell
		c) "A" Network In		c) RMS VM	Leslie Speaker		c) 5mV Min Swell 10mV Max Swell
		d) "A" Network Out		d) RMS VM			d) 15mV Max Swell
		e) "A" Network In		e) RMS VM	Animation Speakers		e) 5mV Min Swell 5mV Max Swell
		f) "A" Network Out		f) RMS VM	Animation Speakers		f) 15mV Max Swell

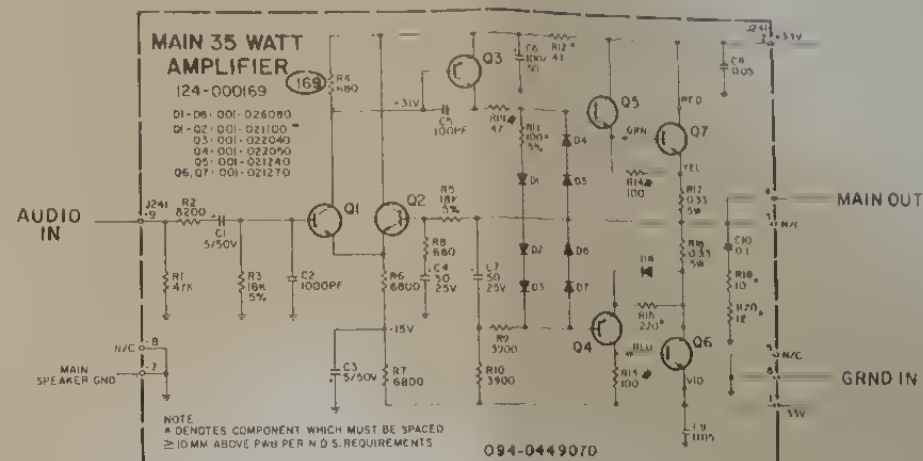
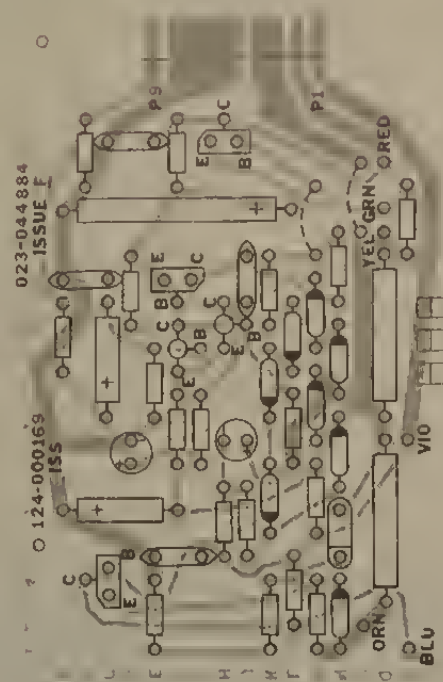
SECTION V

PWB SCHEMATICS AND LAYOUTS

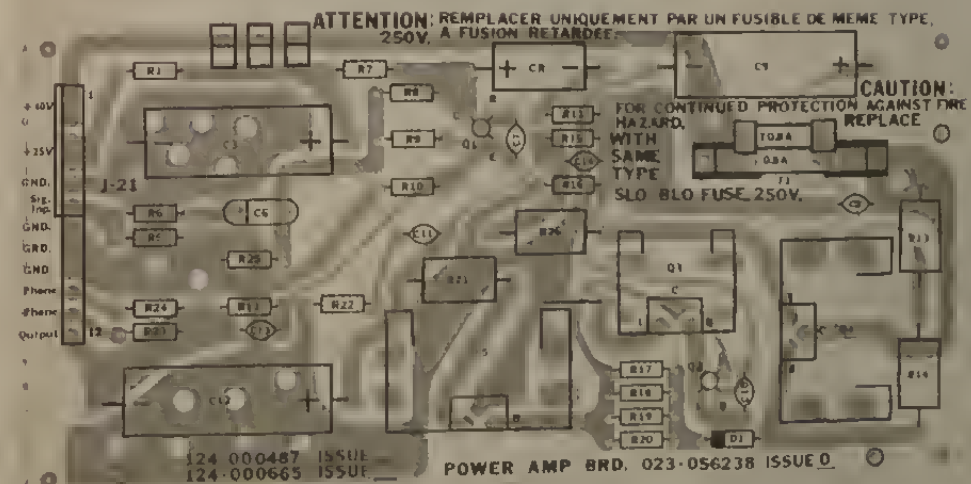
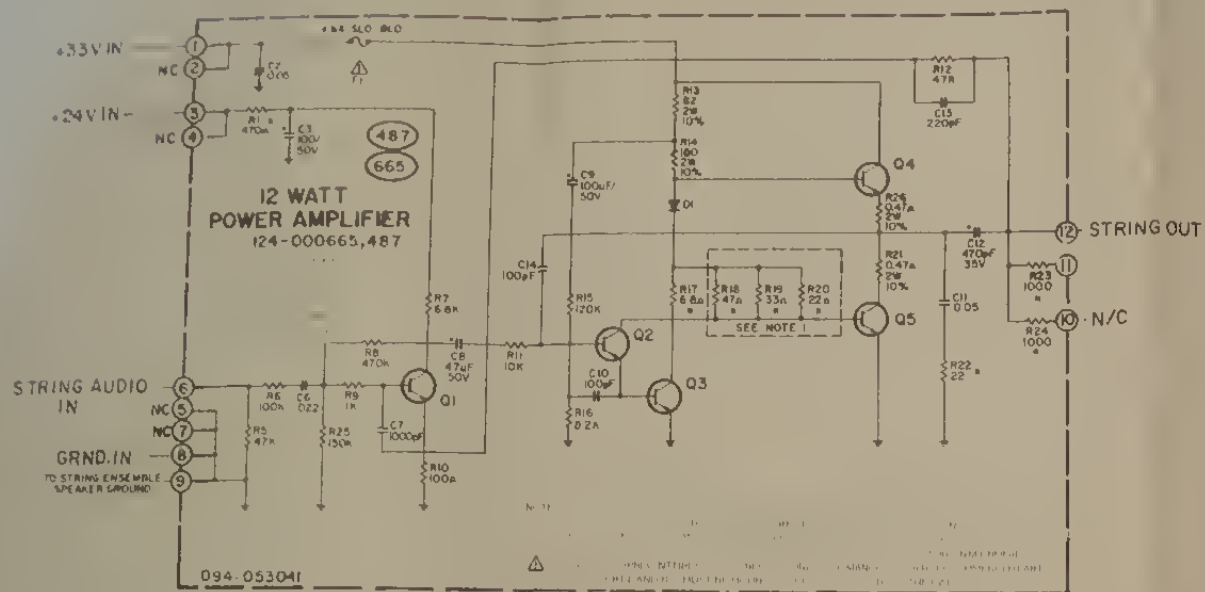
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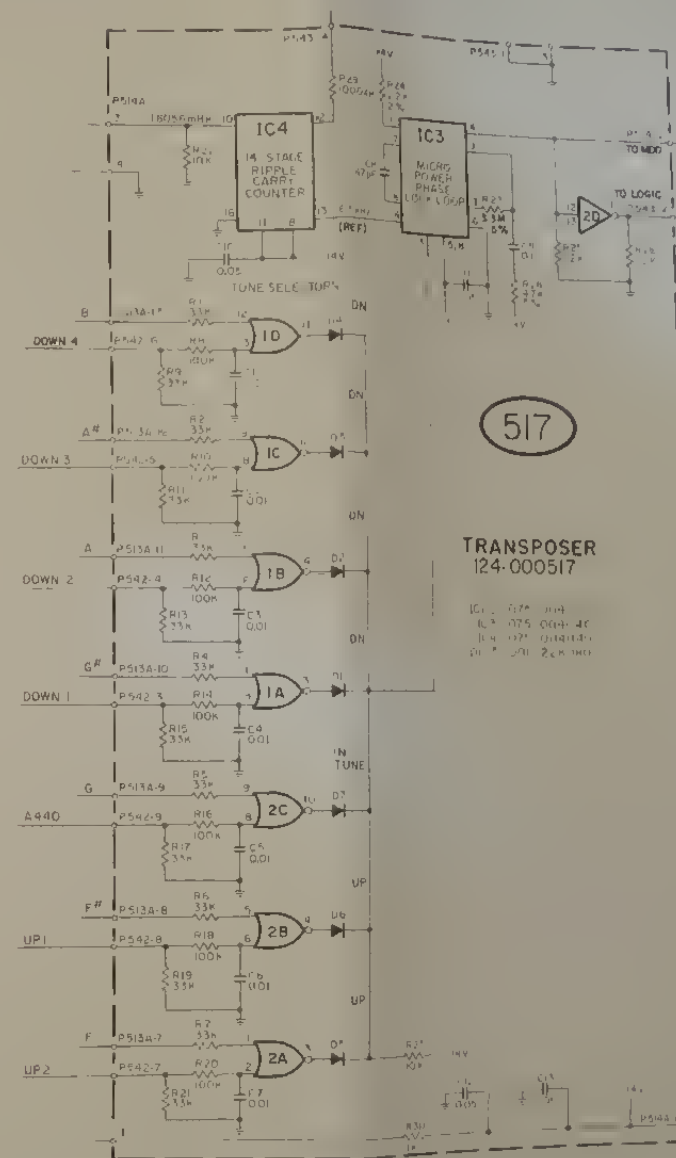
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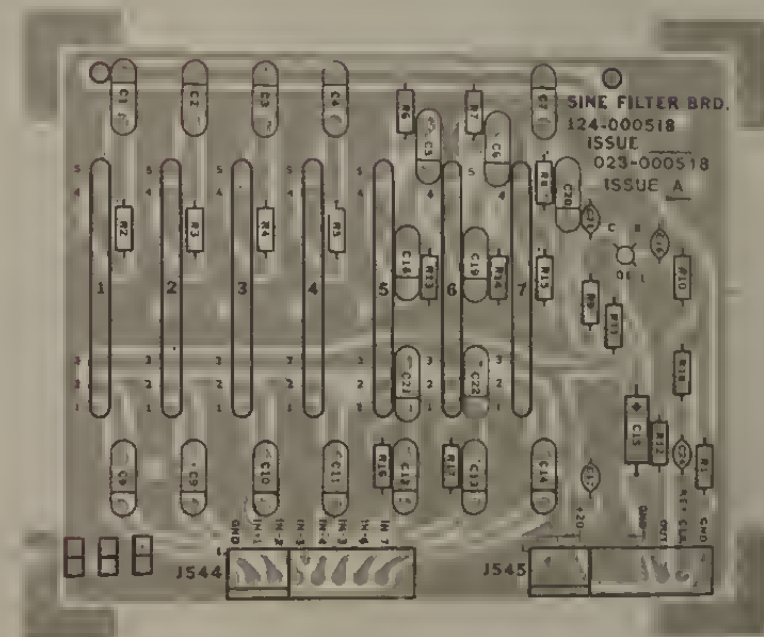
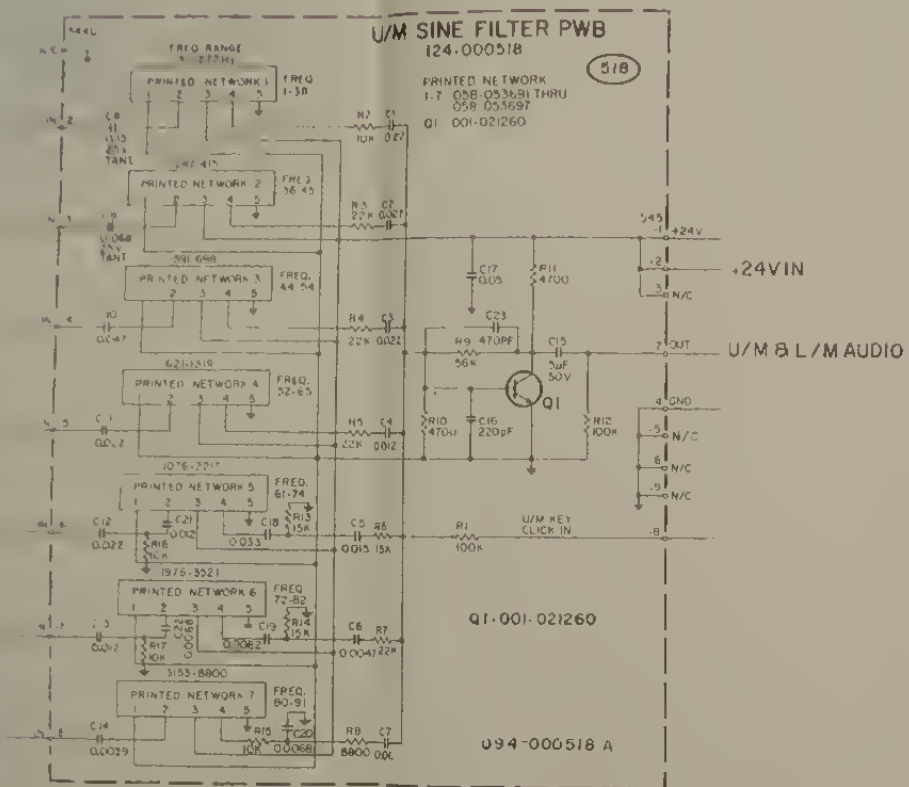
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SCHEMATIC
COPPER & LEGEND
124-000169

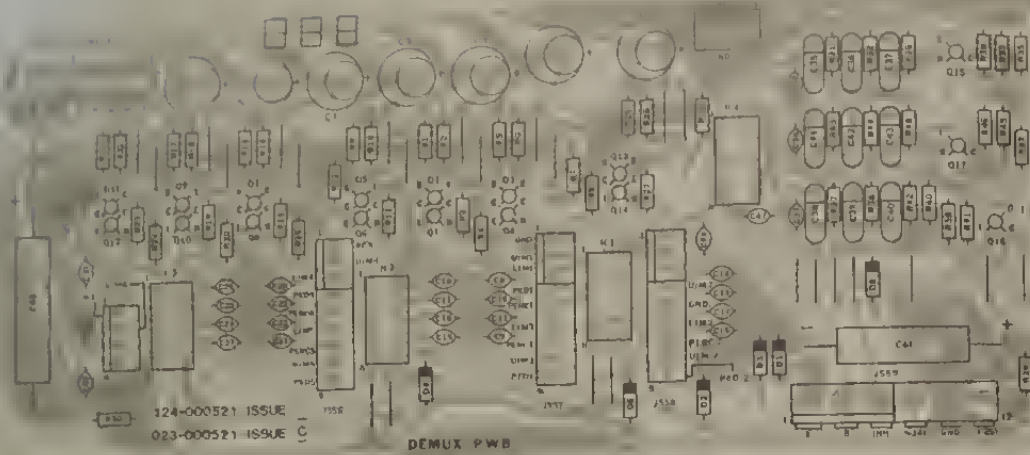


12 WATT POWER AMP PWB
EMATJL
SP & LEGEN
124-000487, 24-000665



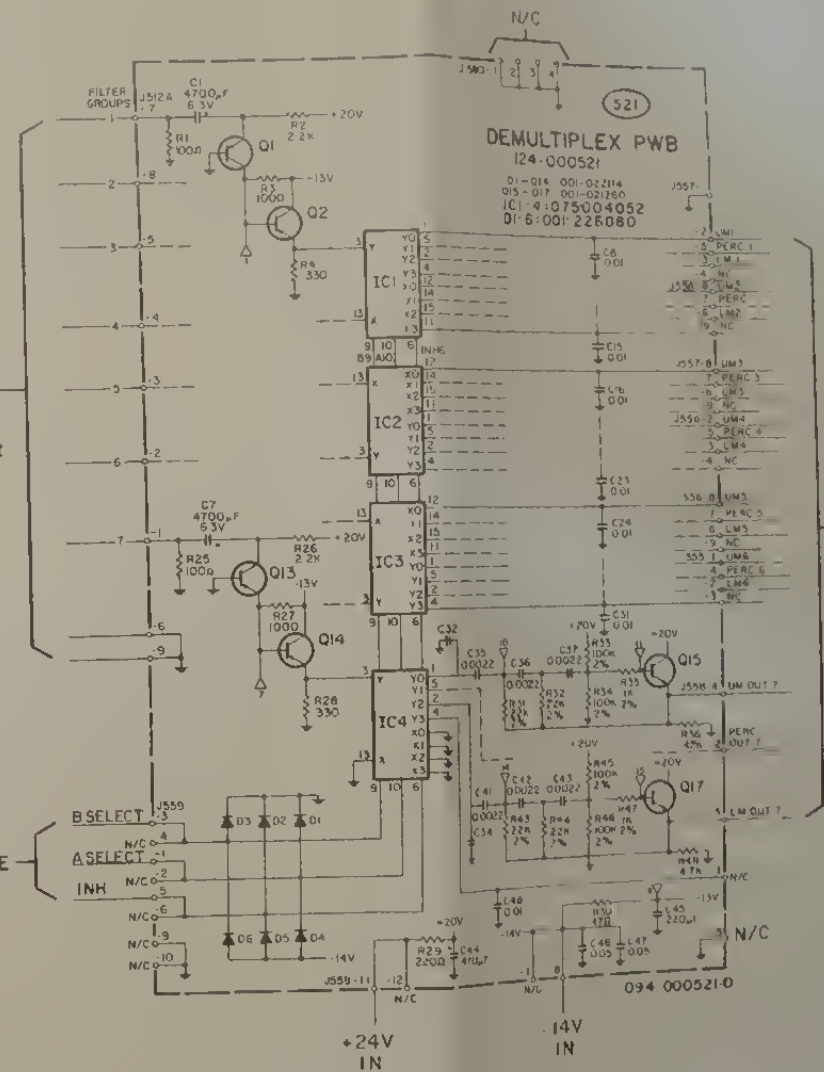
TRANSPOSER PWB
SCHEMATIC
COPPER & LEGEND
124-000517





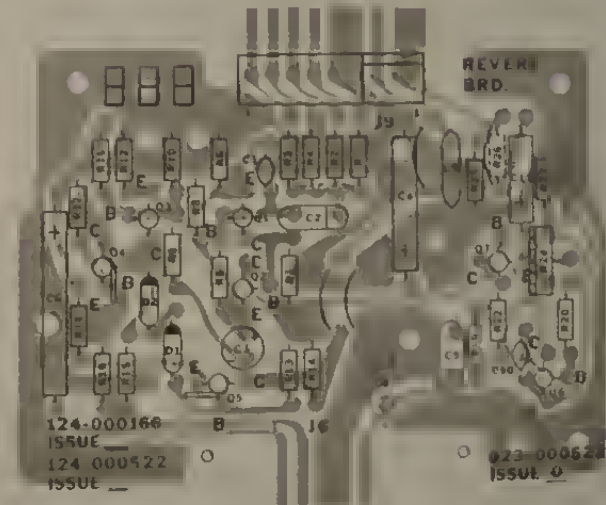
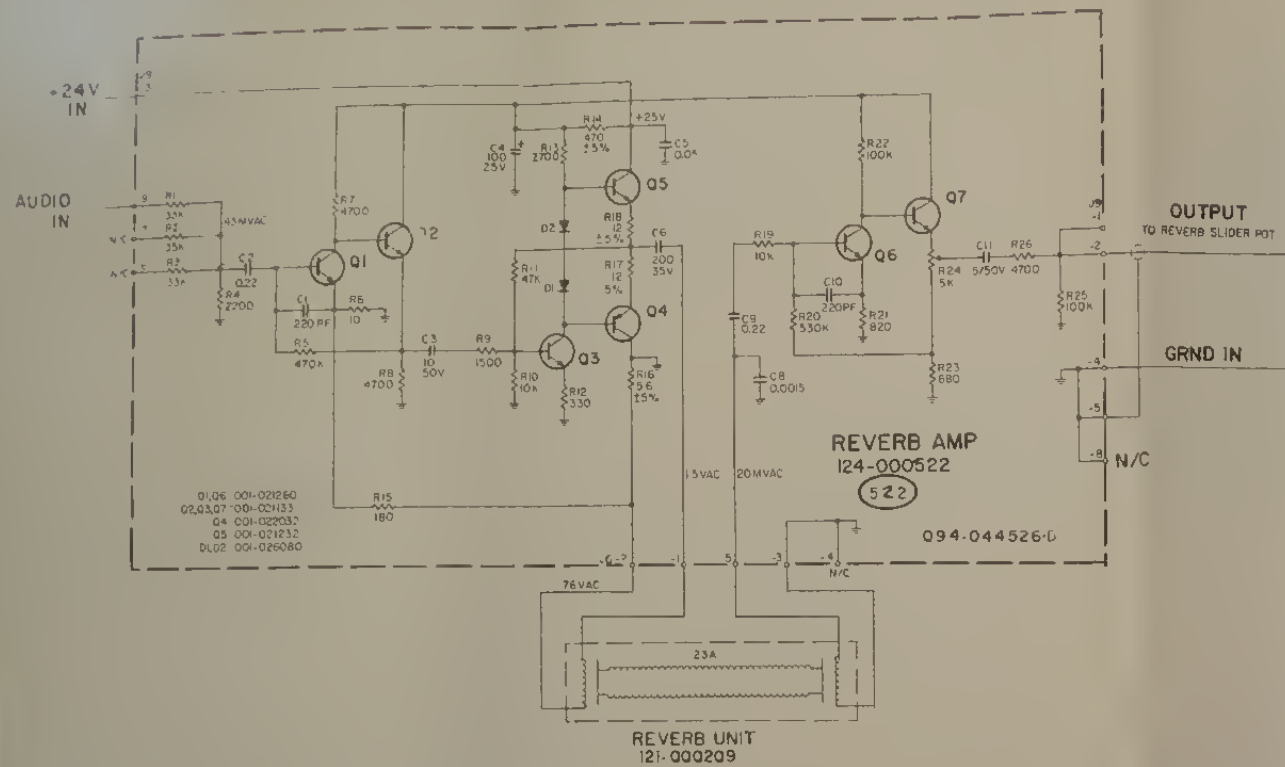
FILTER GROUP
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IN

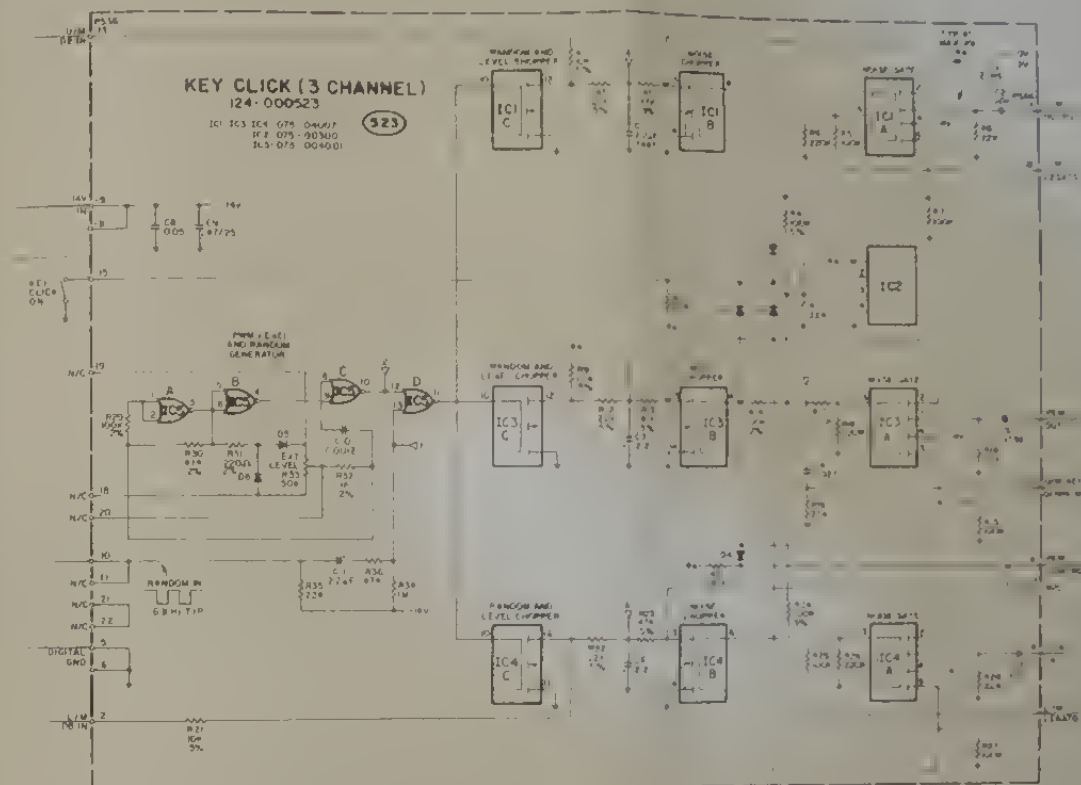
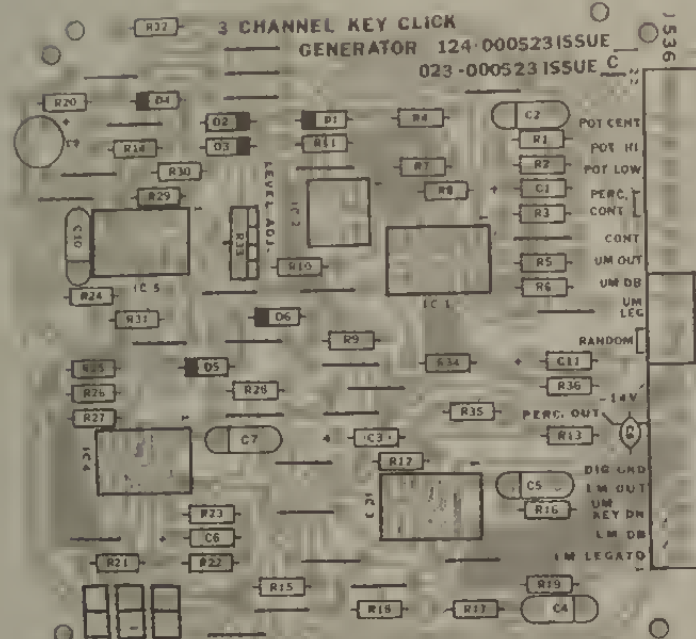


FIL
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OUT TO
FILTERS

DEMUX PWB
SCHEMATIC
COPPER & LEGEND
124-000521



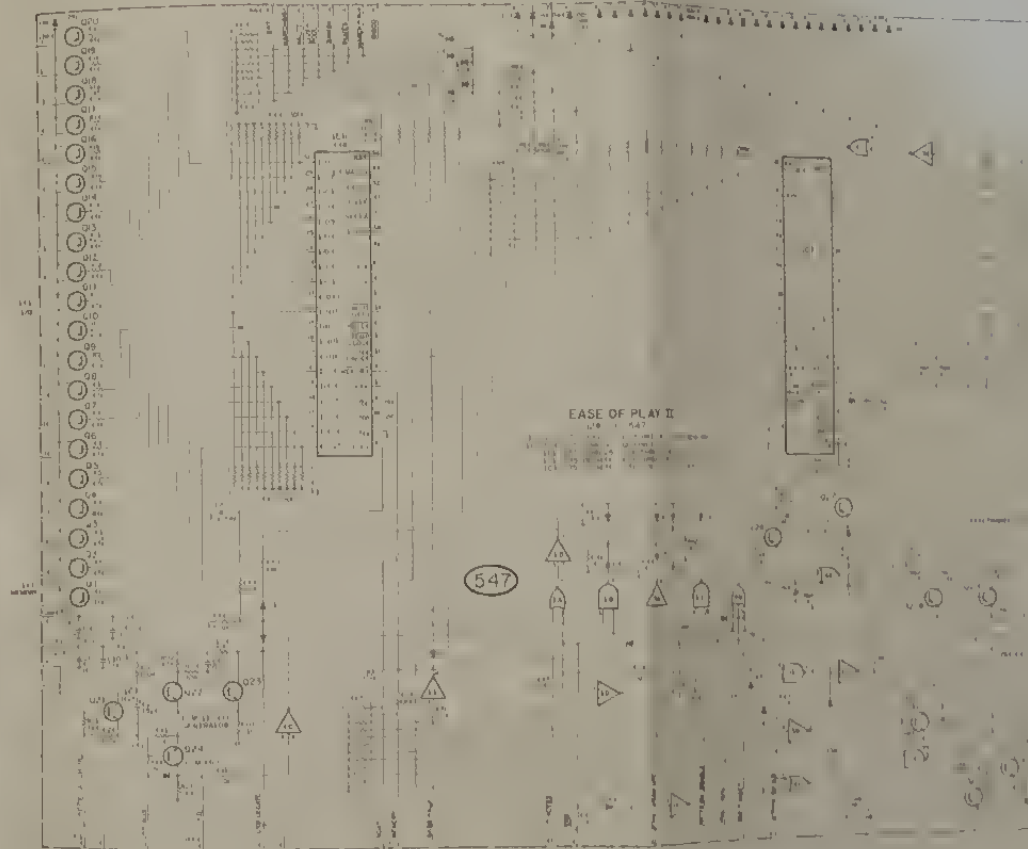
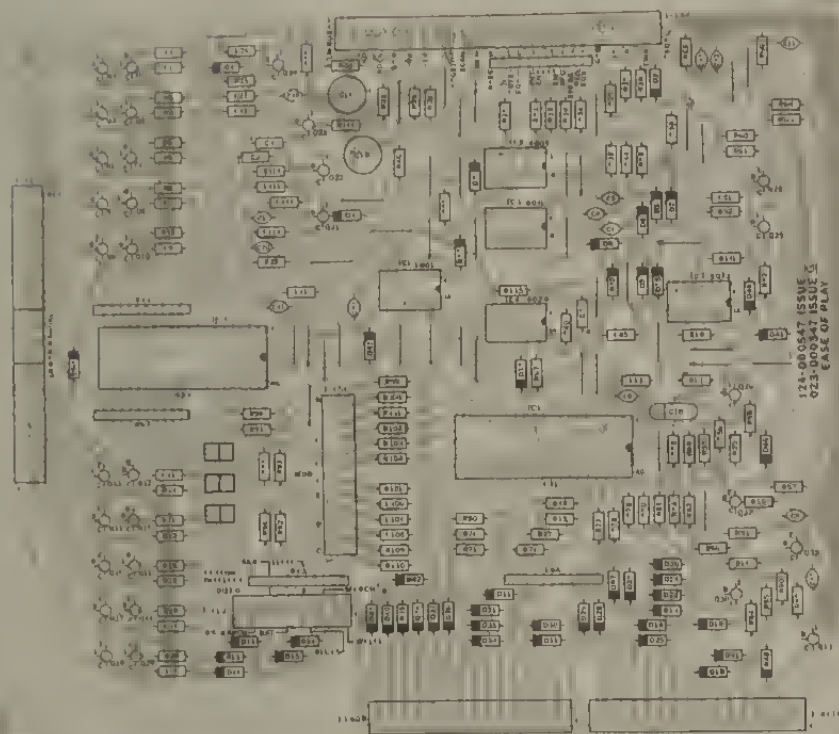
REVERB AMP PCB
17.0
POWER & EGENU
124-000522



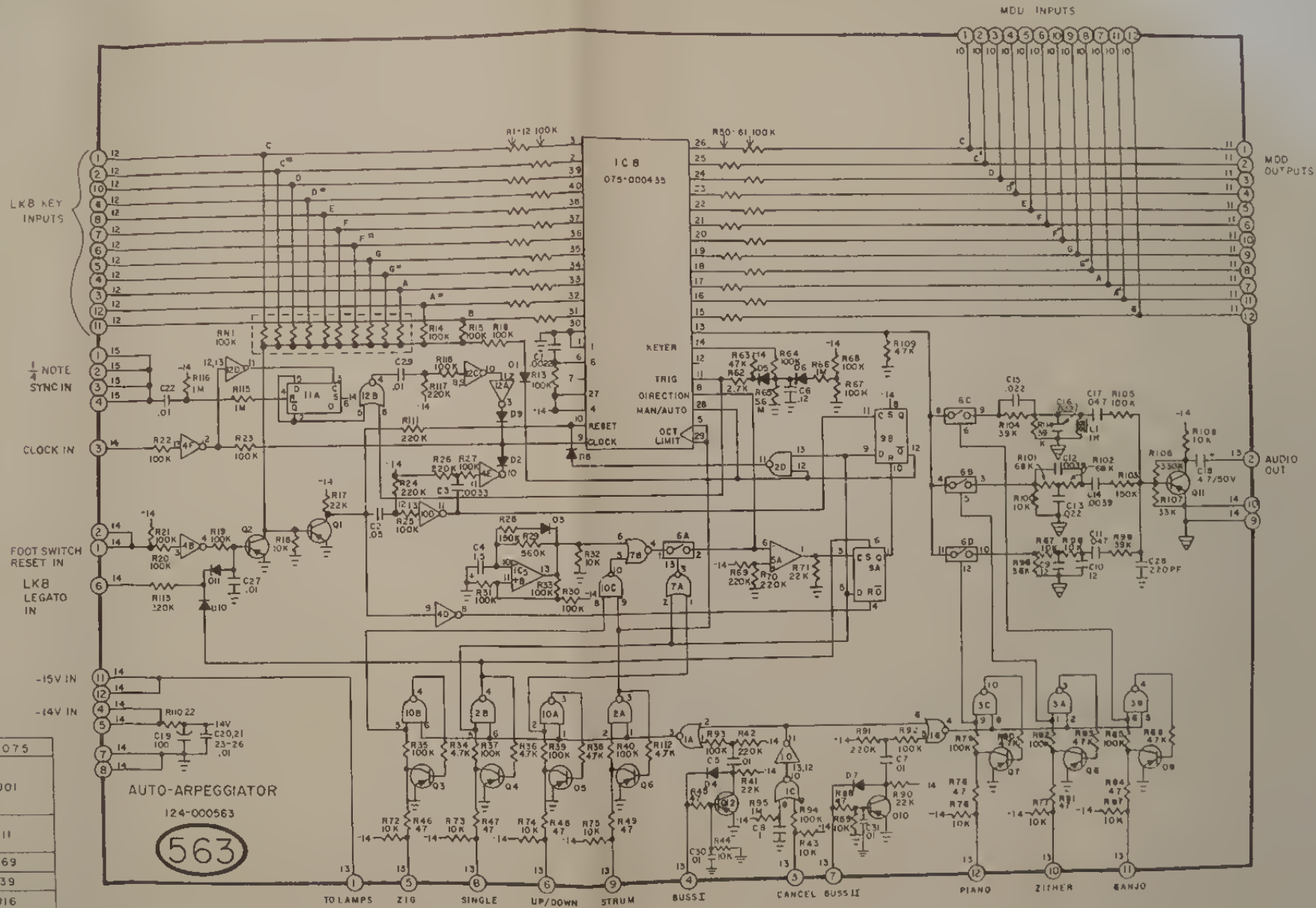
KEY CLICK PWB
SCHEMATIC
COPPER & LEGEND
124-000523



1. 1/2" x 1/2" x 1/2" ASSY
1. 1/2" x 1/2" x 1/2" ASSY



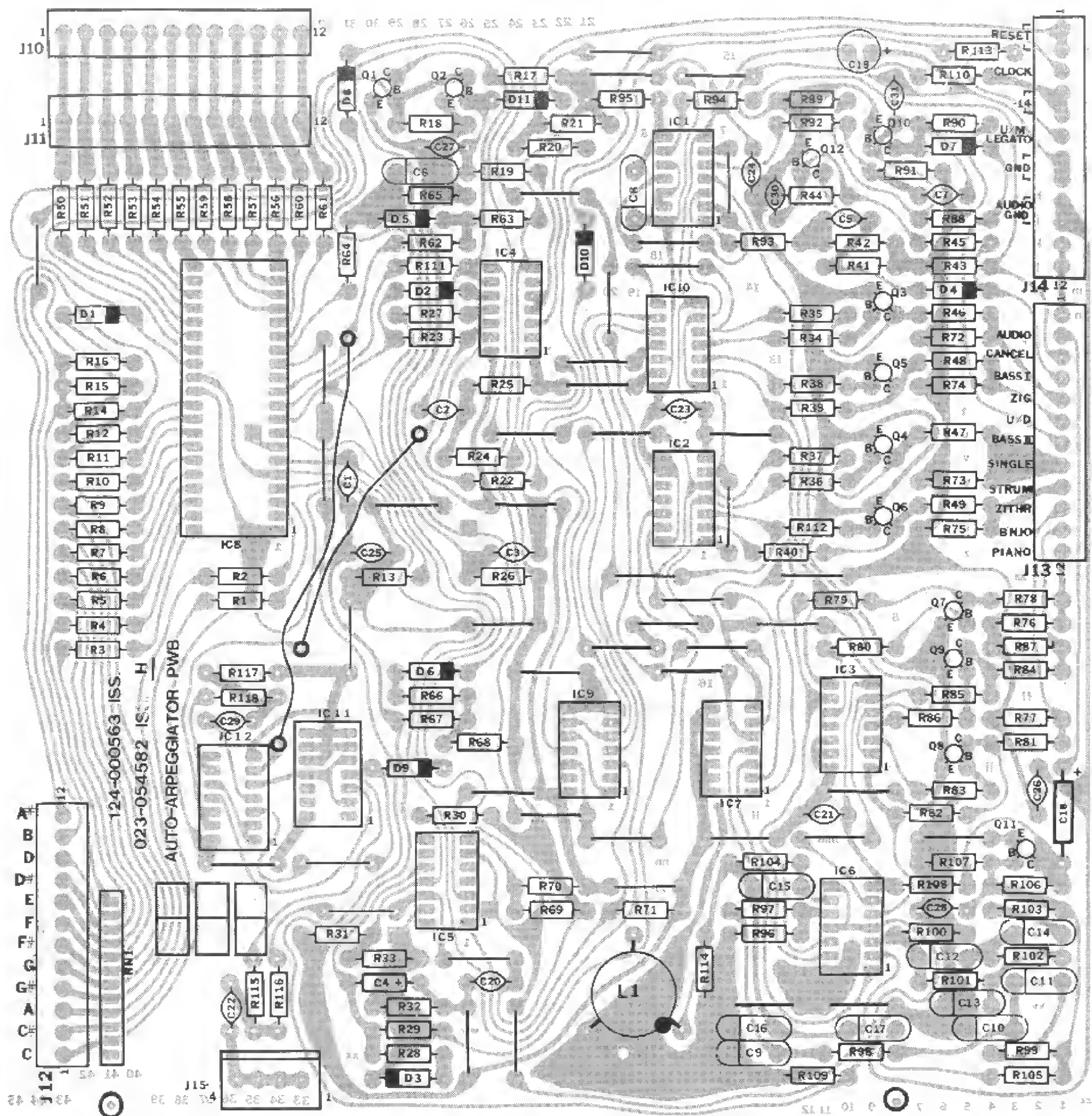
EASE OF PLAY #2 PV3
SCHEMATIC
COPYR & LEGEND
124-000547



IC #	PART - 075
1	
12	4001
7	
2	4011
3	4069
5	339
6	4016
8	435
9	4013
11	
10	4093

AJT A P PWT
IC

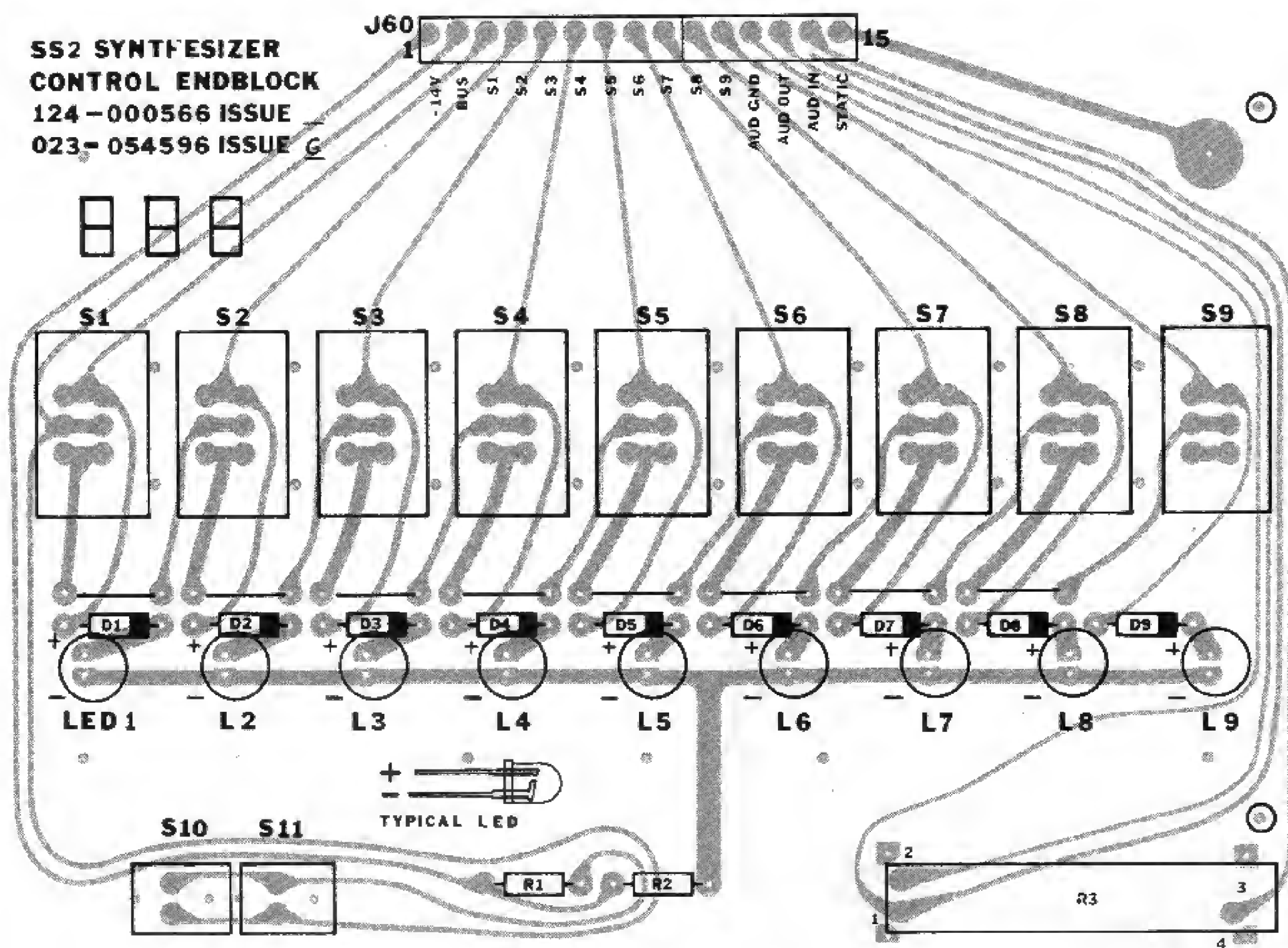
24 00063



AUTO ARP PWB
COPPER & LEGEND

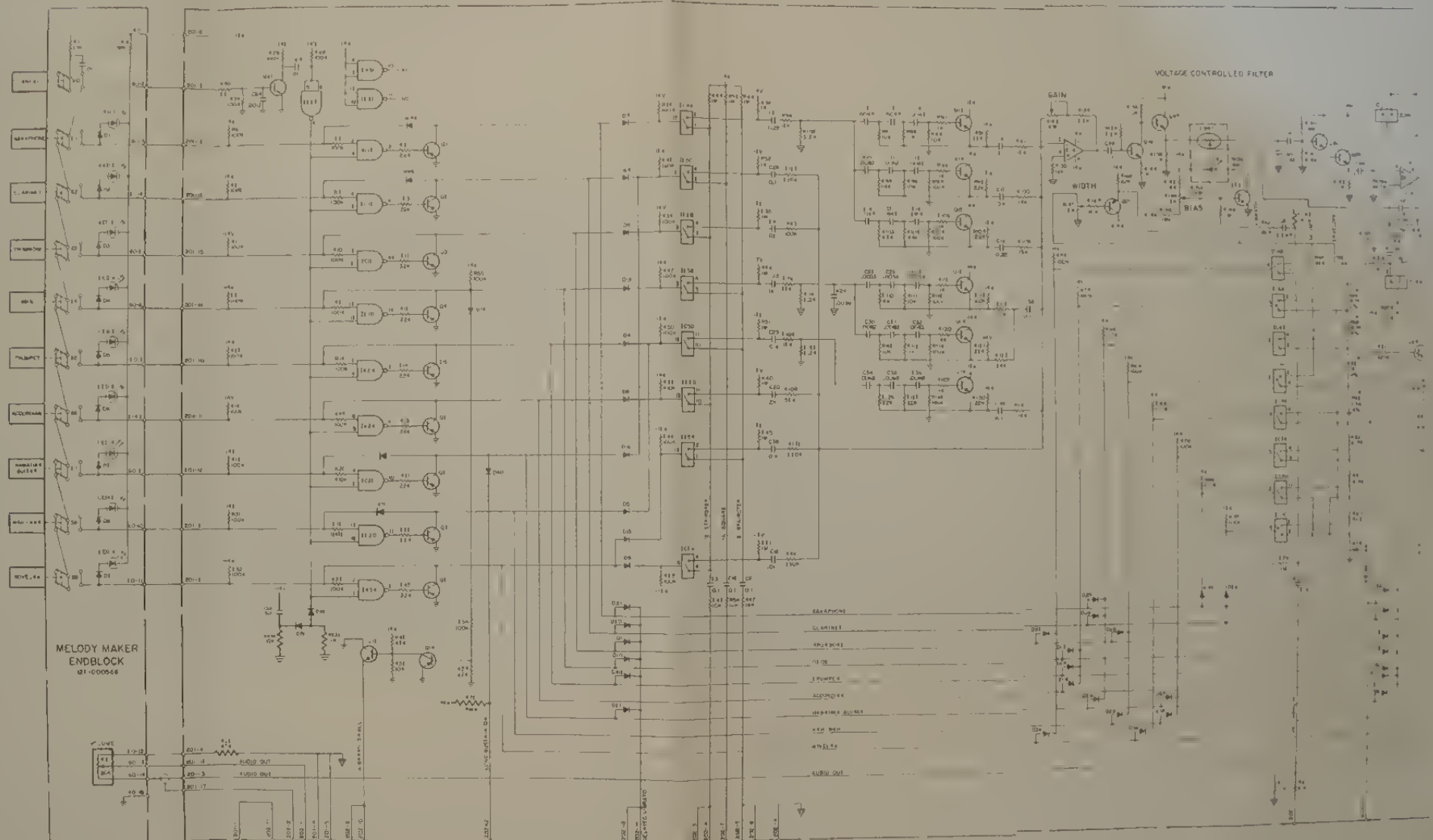
124-000563

SS2 SYNTHESIZER
CONTROL ENDBLOCK
124-000566 ISSUE
023-054596 ISSUE G



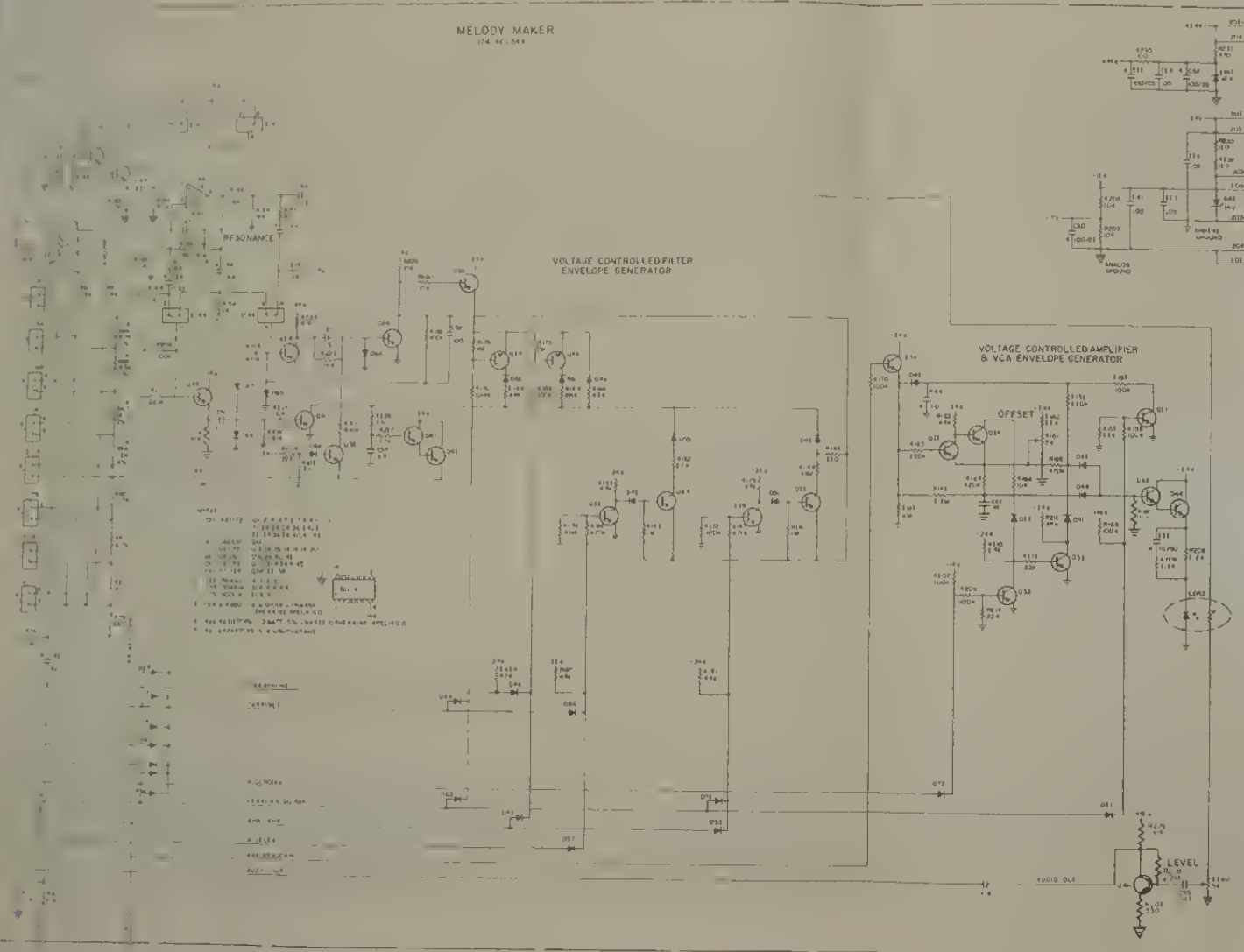
MELODY MAKER SS2 PWB
COPPER & LEGEND

124-000566

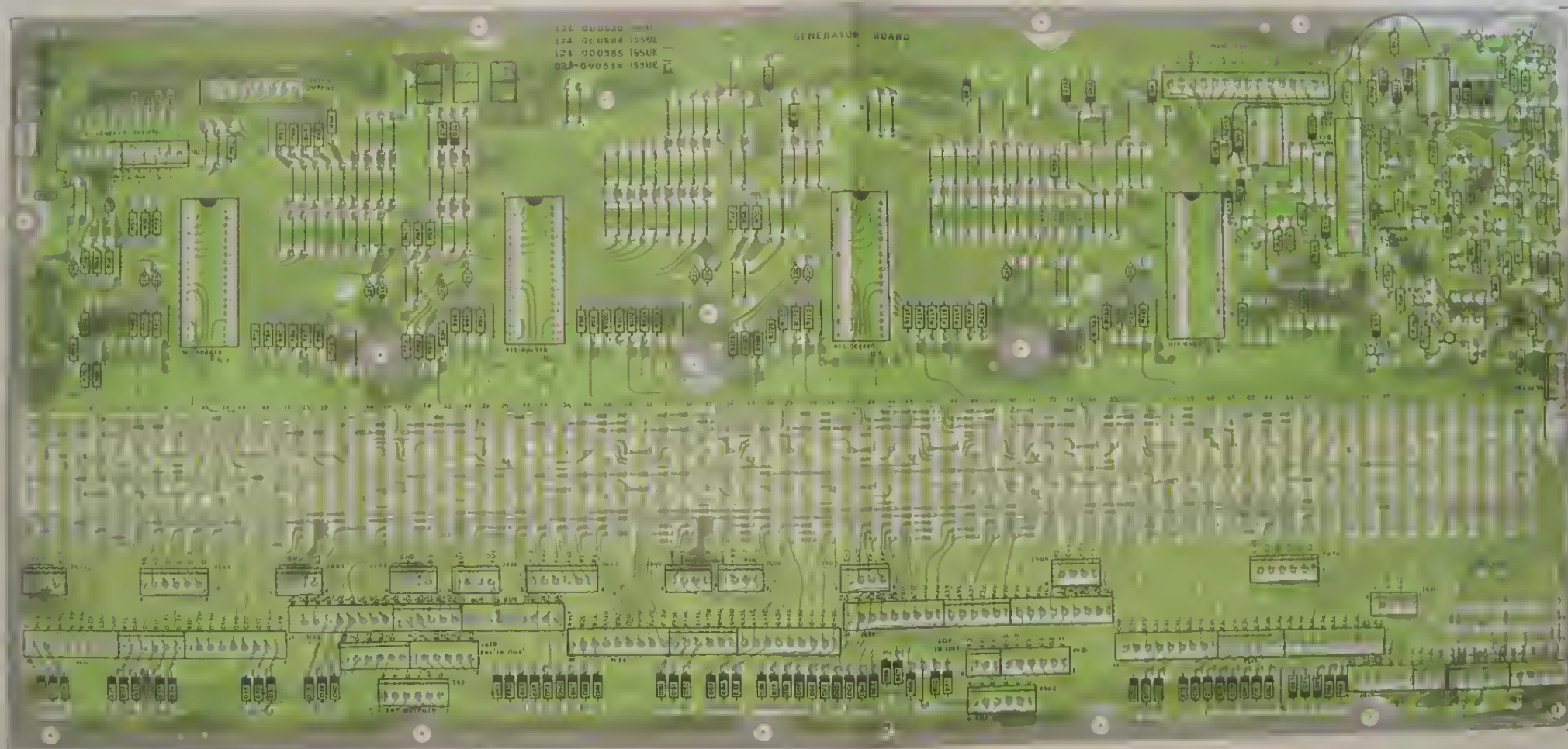


MELODY MAKER PWB
MELODY MAKER SS2 PWB
SCHEMATICS
124-000566

MELODY MAKER
124-000566

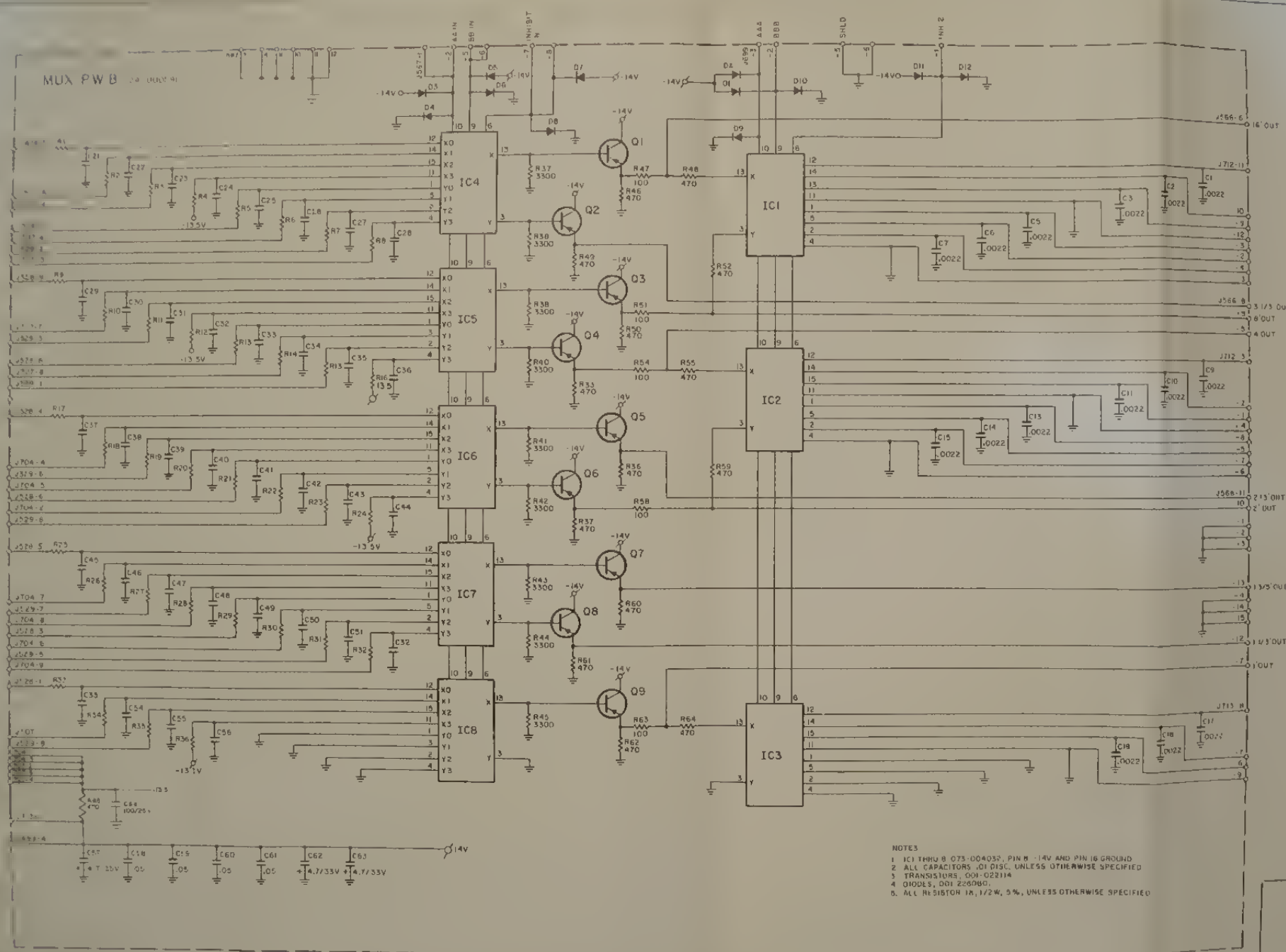


MELODY MAKER PWB
MELODY MAKER SS2 PWB
SCHEMATICS
124-000561 124-000566



GENERATOR PWB
 COPPER & LEGEND

124 000505

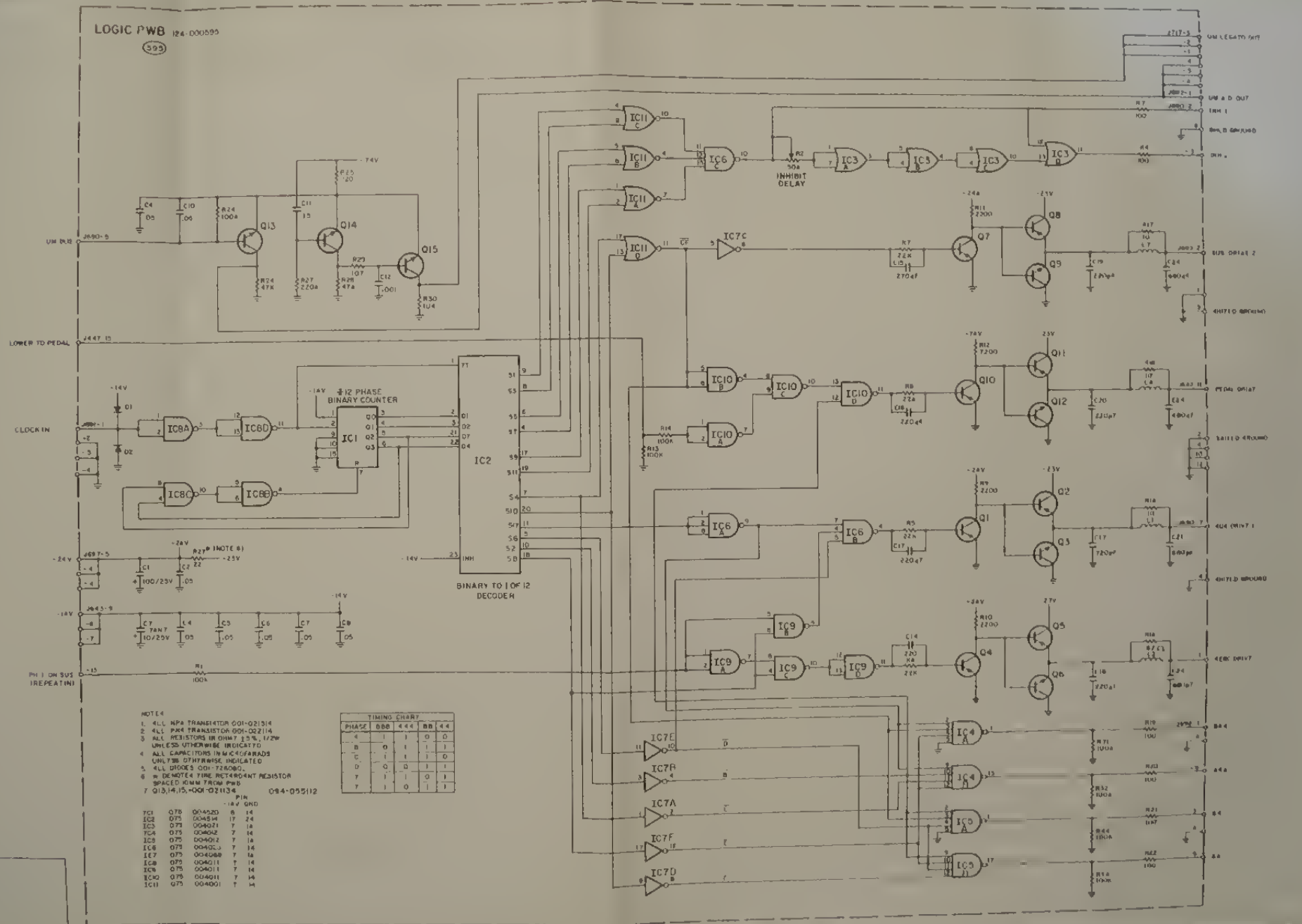


- NOTES
1. IC1 THRU 8 073-004035, PIN 8 -14V AND PIN 10 GROUND
 2. ALL CAPACITORS .01 DISC, UNLESS OTHERWISE SPECIFIED
 3. TRANSISTORS, 001-022114
 4. DIODES, 001-226060
 5. ALL RESISTOR 1/4W, 5%, UNLESS OTHERWISE SPECIFIED

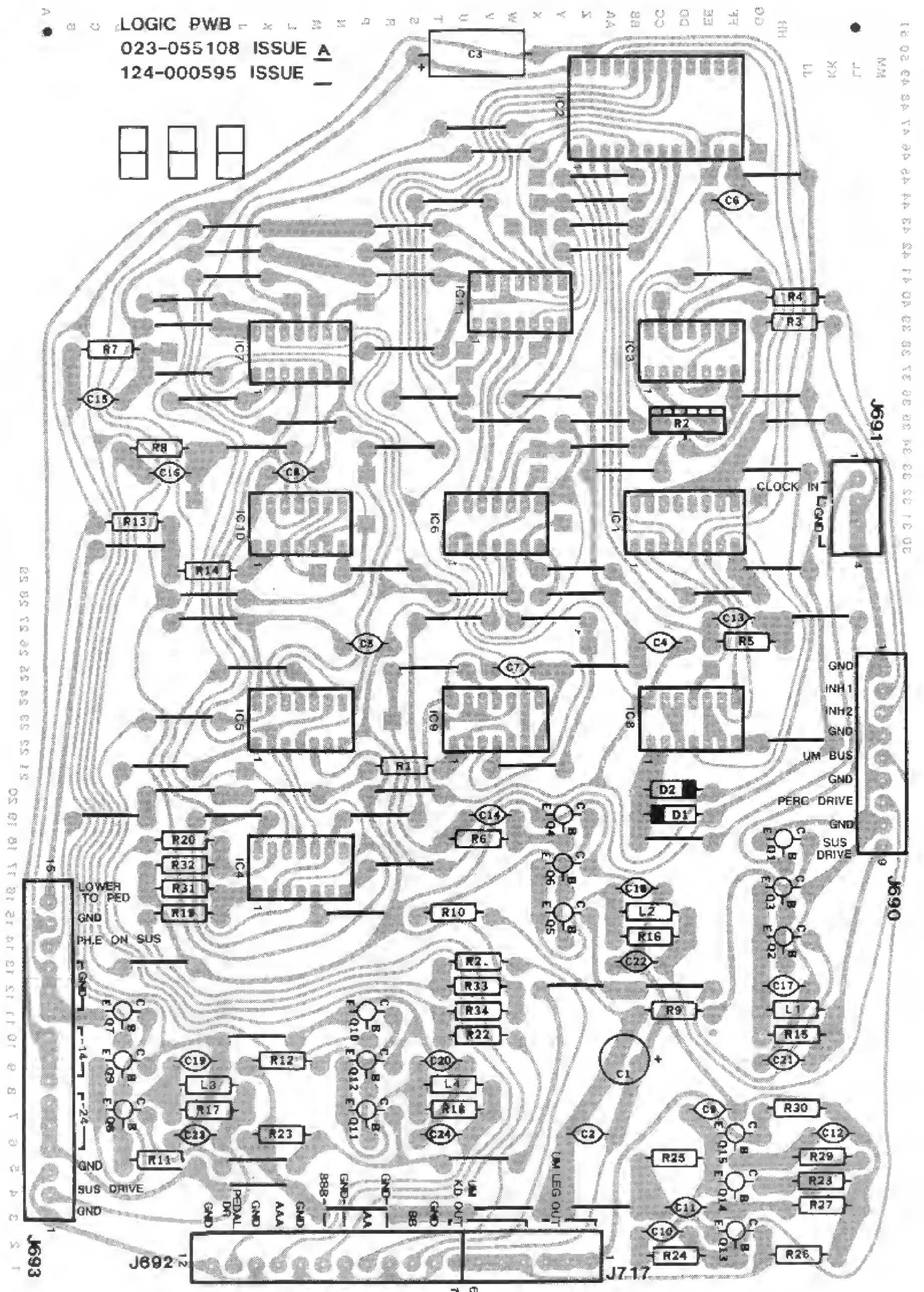
MULTIPLEX P.W.B.
SCHEMATIC
14-000591

LOGIC PWB 124-000595

(595)



LOGIC PWB
023-055108 ISSUE A
124-000595 ISSUE



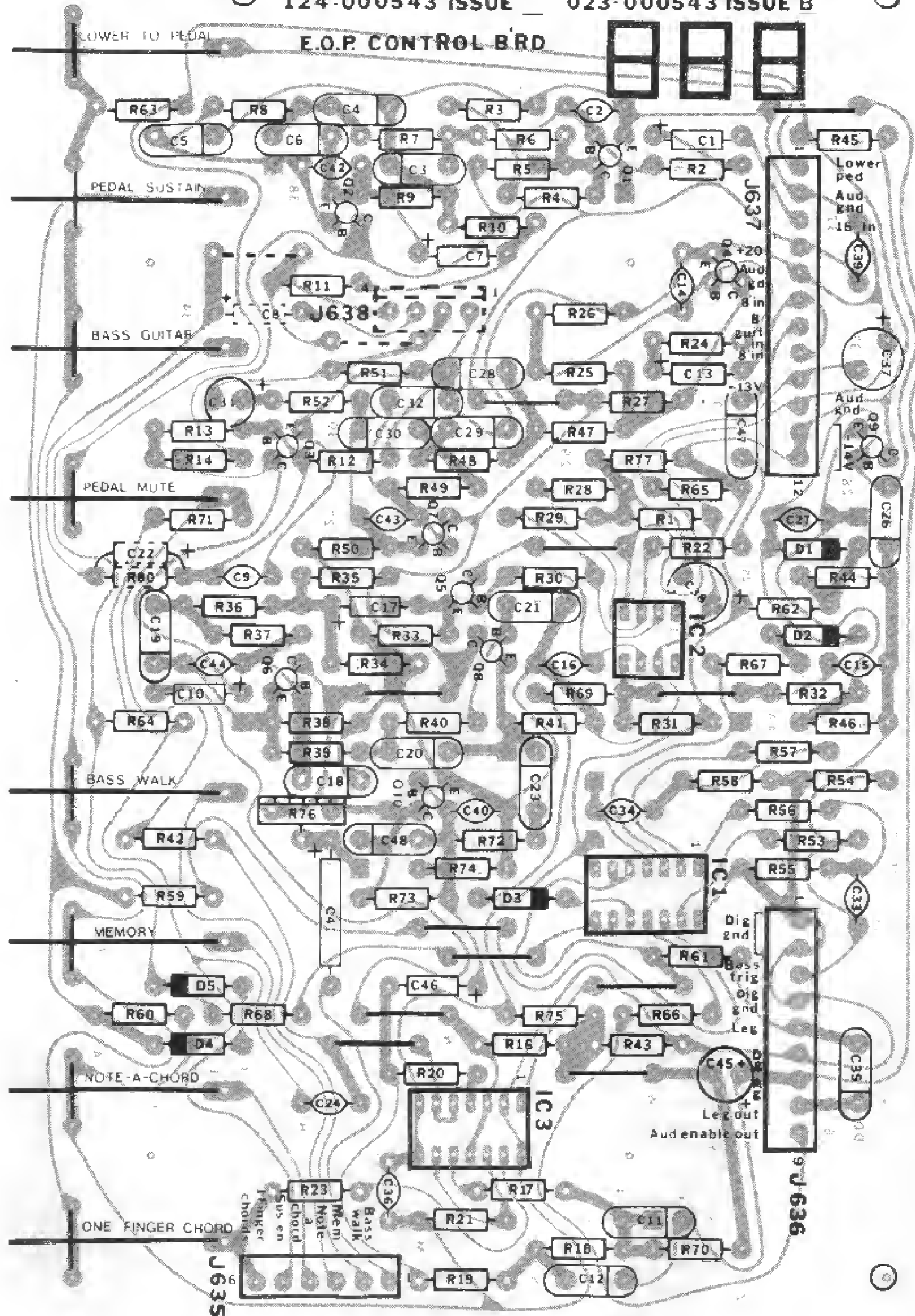
LOGIC PWB
COPPER & LEGEND

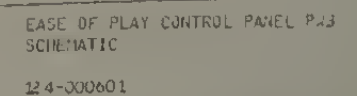
124-000595

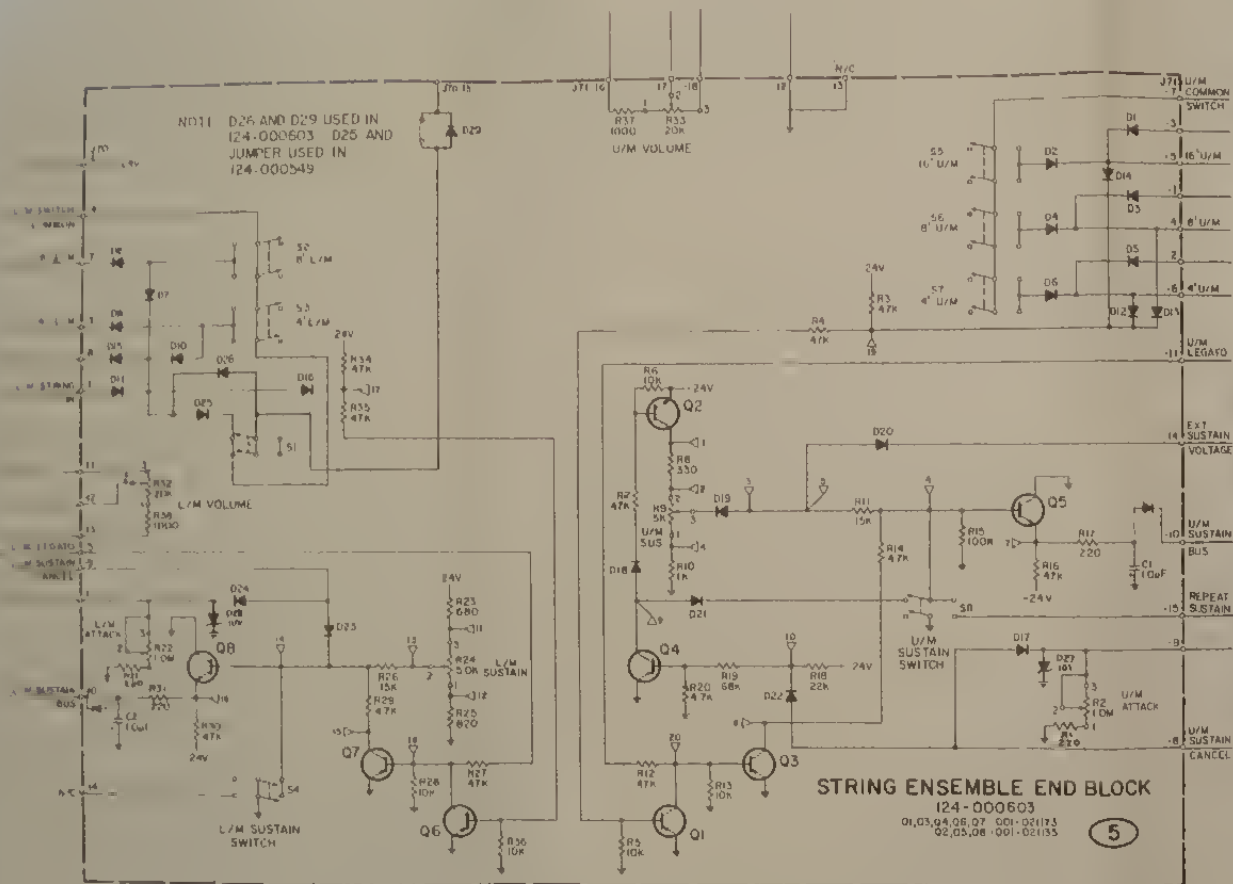
124-000601 ISSUE

124-000543 ISSUE

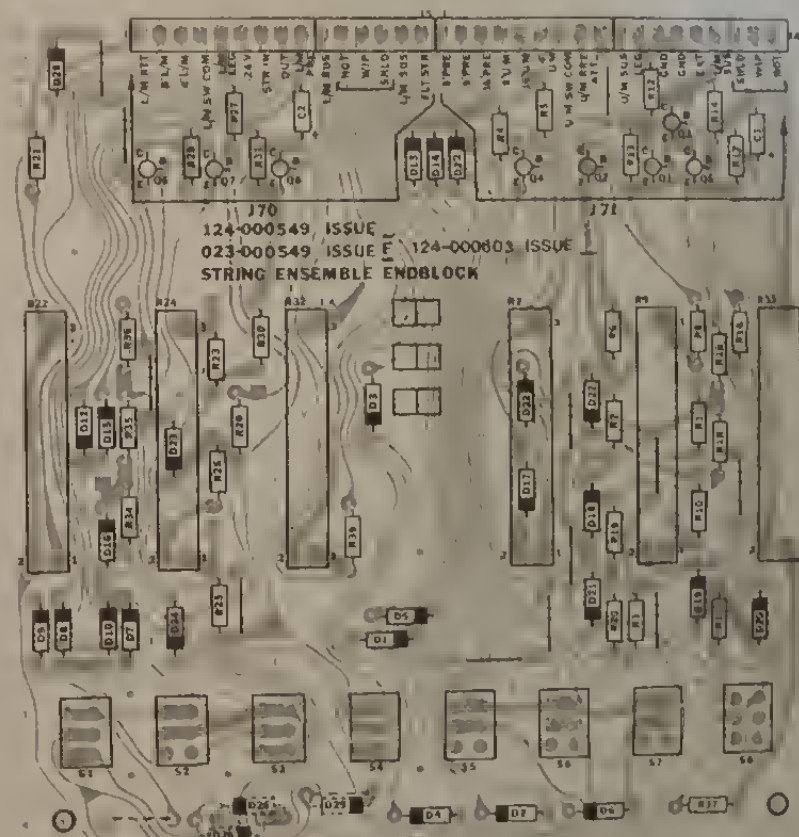
023-000543 ISSUE B

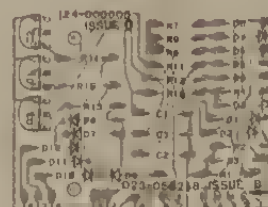
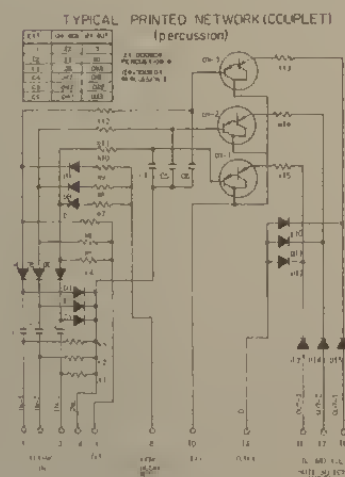
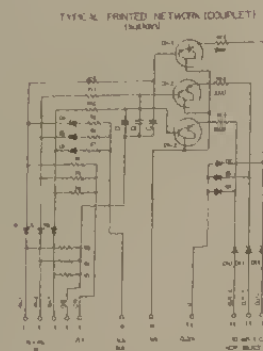






STRING ENSEMBLE ENDBLOCK PWB
S-1000
C-1000 & LOGIC
124-000603





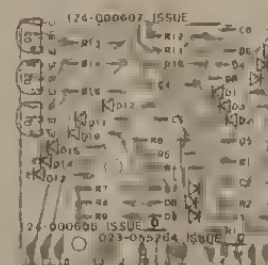
124-000605 SUSTAIN COUPLETS PWB
(REPLACES 058-054315)

R1-R3 TRANSISTOR 001-022103
D1-D12 SIG DIODE 001-226080
C1-C3 CAP .22 MFD 438-210292



124-000606 PERC A COUPLETS PWB
(REPLACES 058-054320)

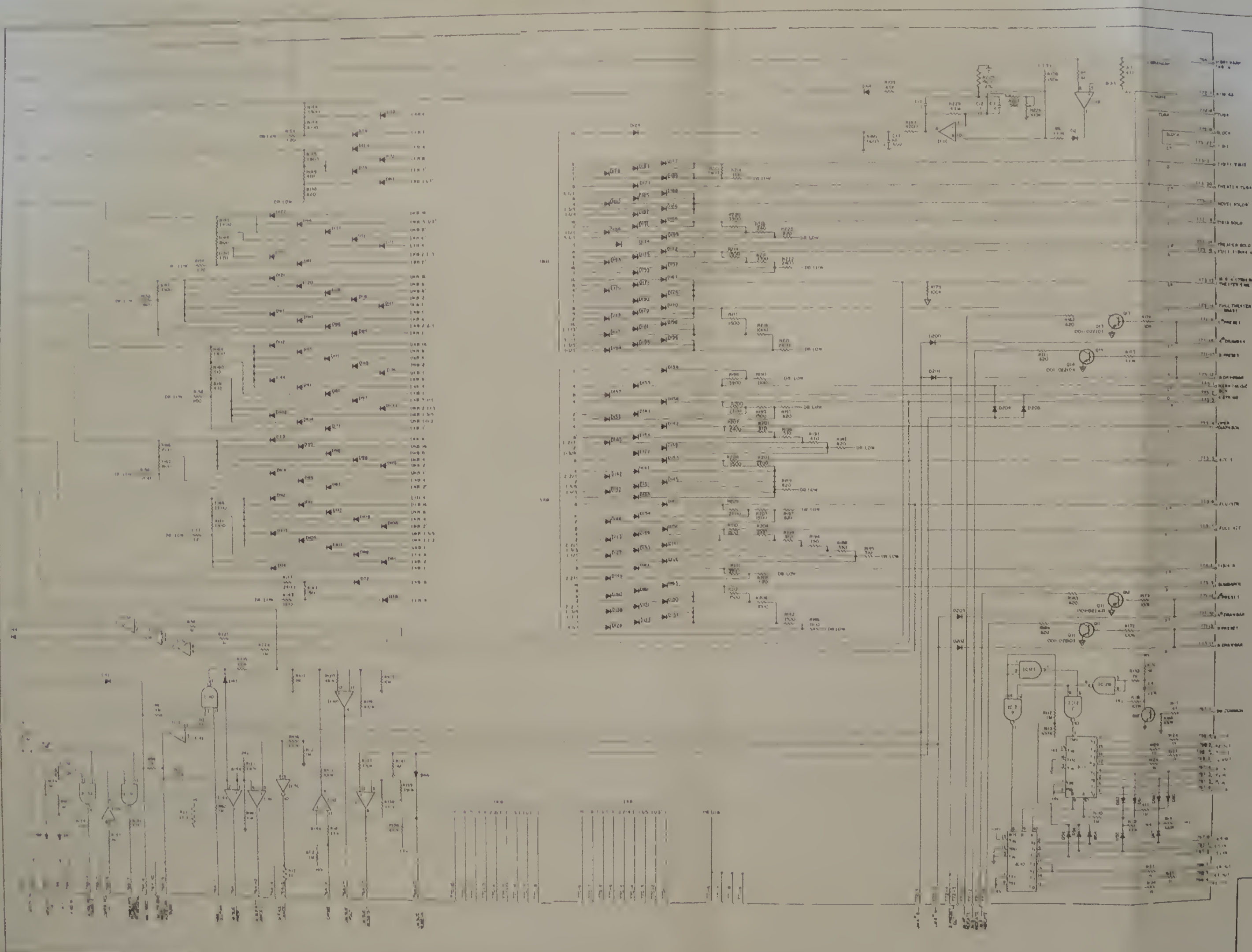
R1-R3 TRANSISTOR 001-022103
D1-D15 SIG DIODE 001-226080
C1-C3 CAP .22 MFD 438-210292
C4-C6 CAP .047 MFD 438-210212



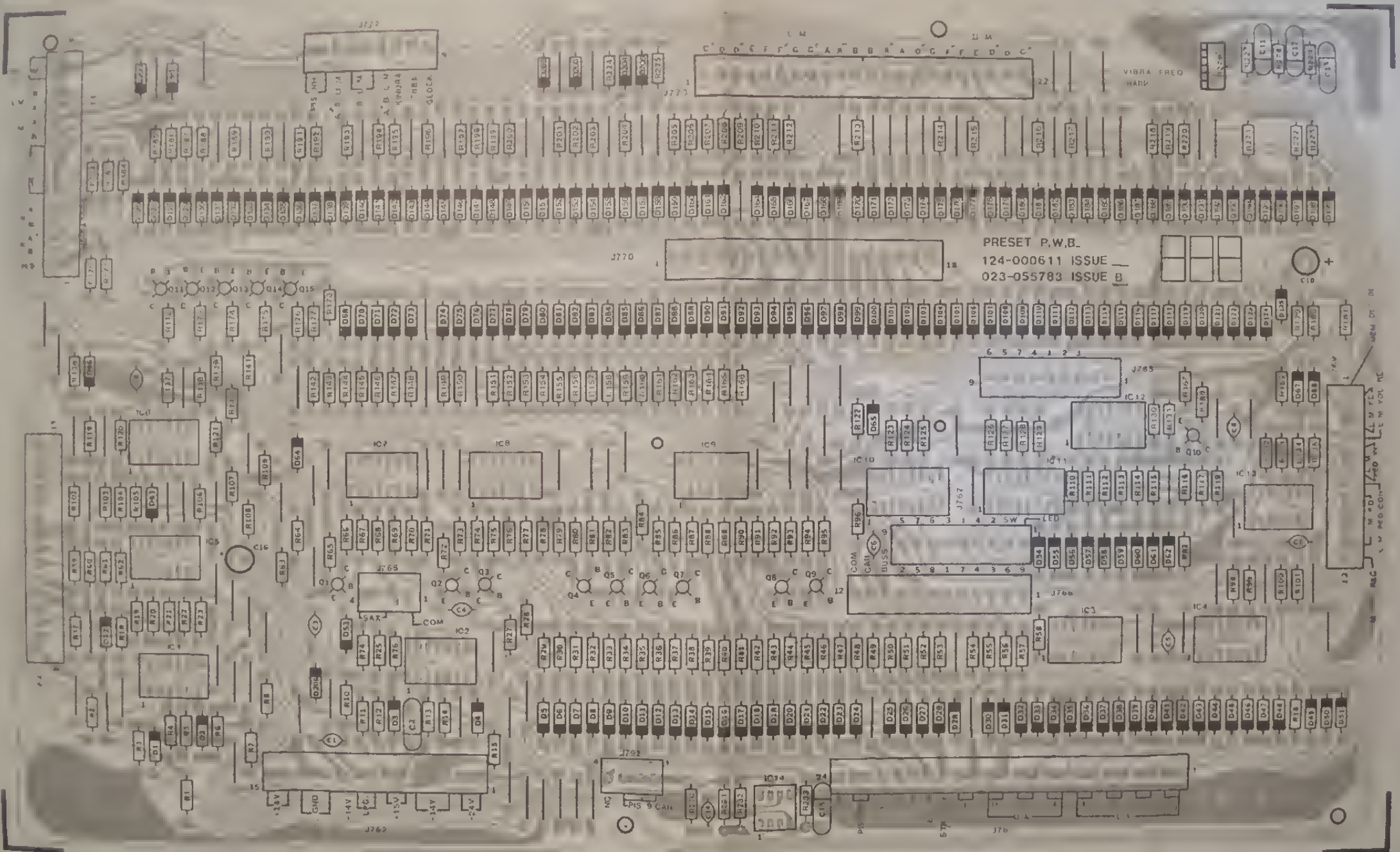
124-000607 PERC B COUPLETS PWB
(REPLACES 058-054319)

R1-R3 TRANSISTOR 001-022103
D1-D15 SIG DIODE 001-226080
C1 CAP .15 MFD 438-210272
C2 CAP .10 MFD 438-210252
C3 CAP .068 MFD 438-210232
C4 CAP .015 MFD 438-210152
C5 CAP .022 MFD 438-210172
C6 CAP .033 MFD 438-210192

SUSTAIN KEYS COUPLETS PWB
PERC KEYS COUPLETS PWB
SCHEMATICS
COPPIERS & LEGENDS
124-000605, 606, 607

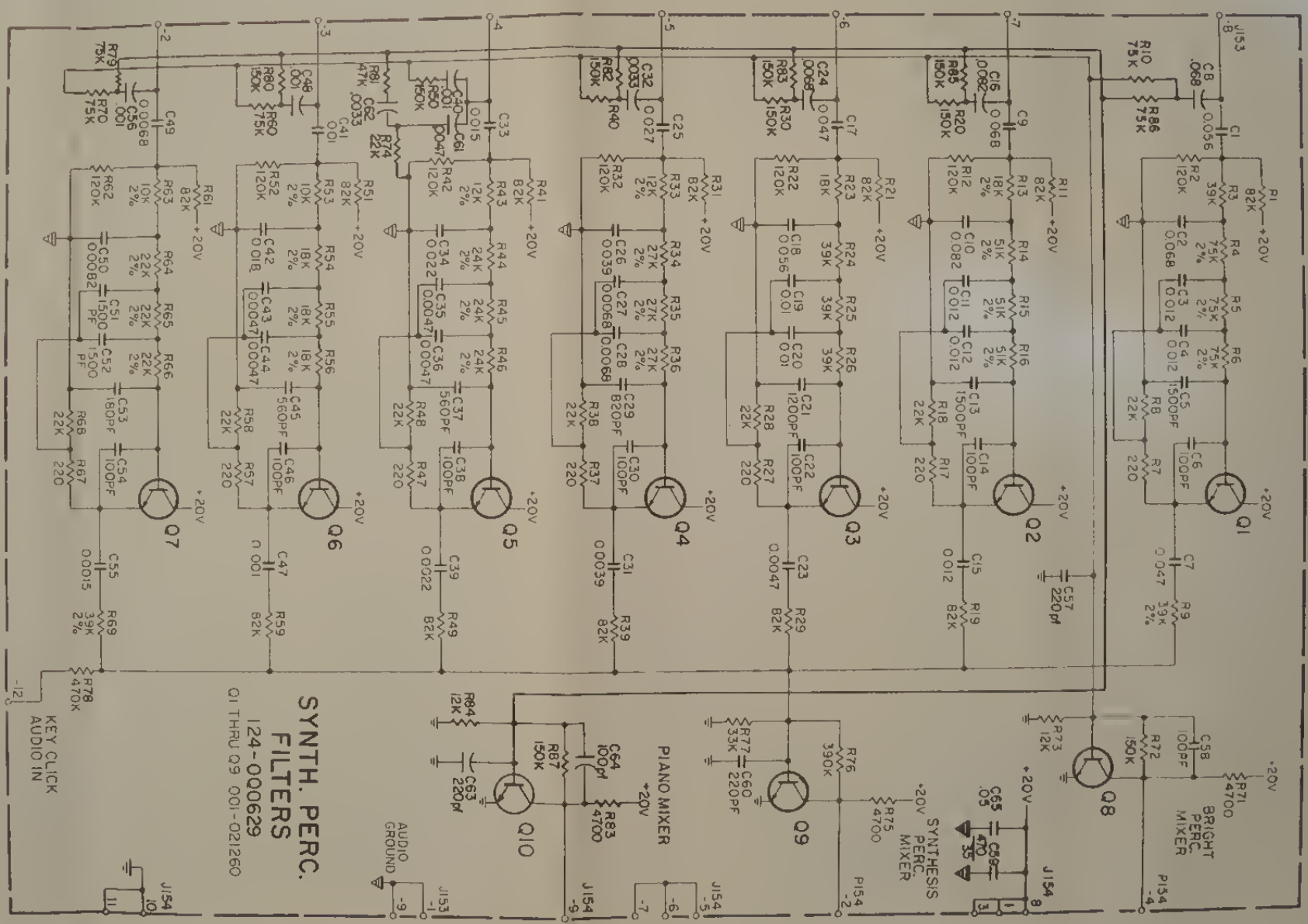


PRESETS PWD
SCHEMATIC
124-000611

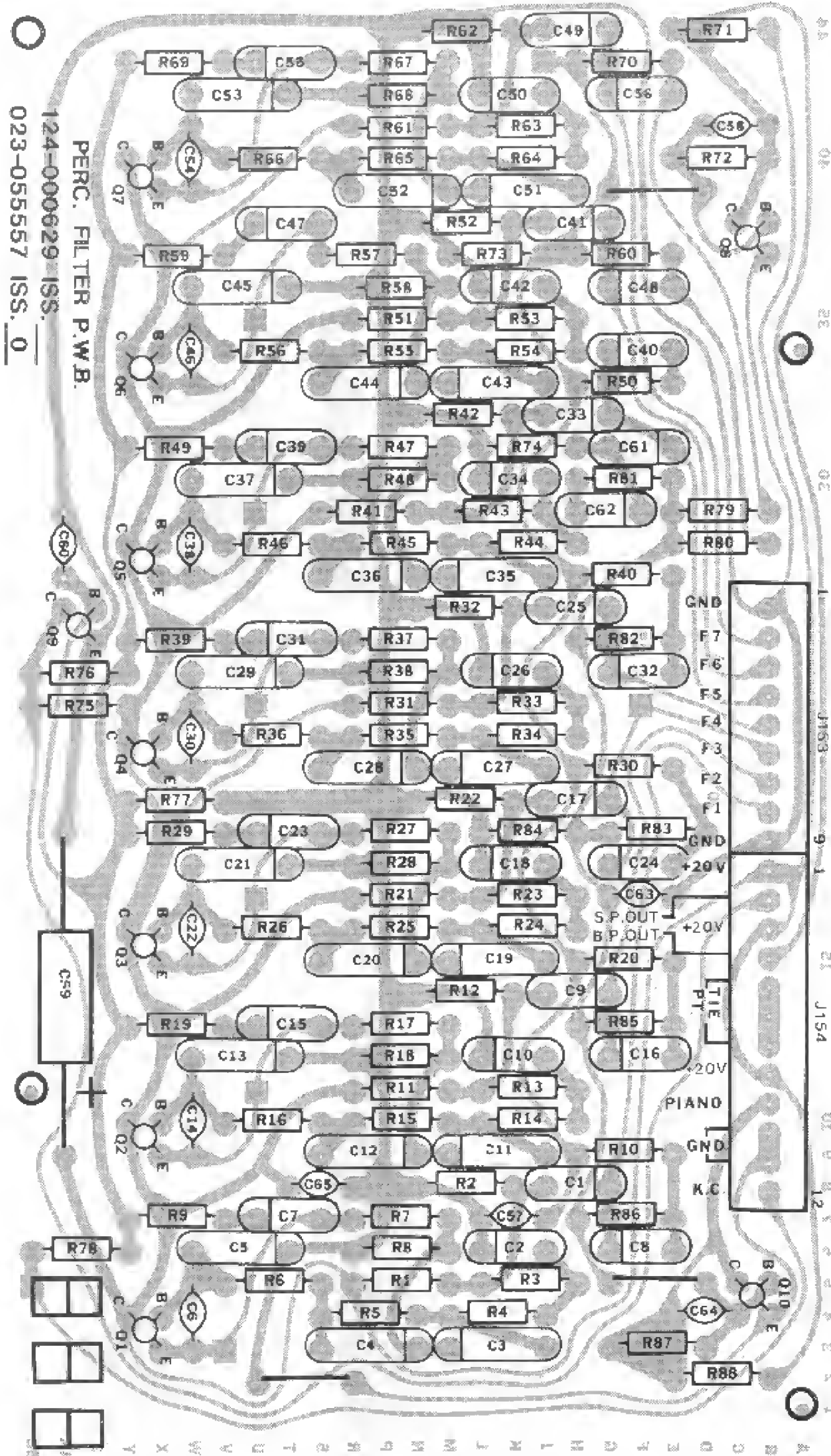


PRESET P.W.B.
124-000611 ISSUE
023-055783 ISSUE B

Page
A C E C
4 11

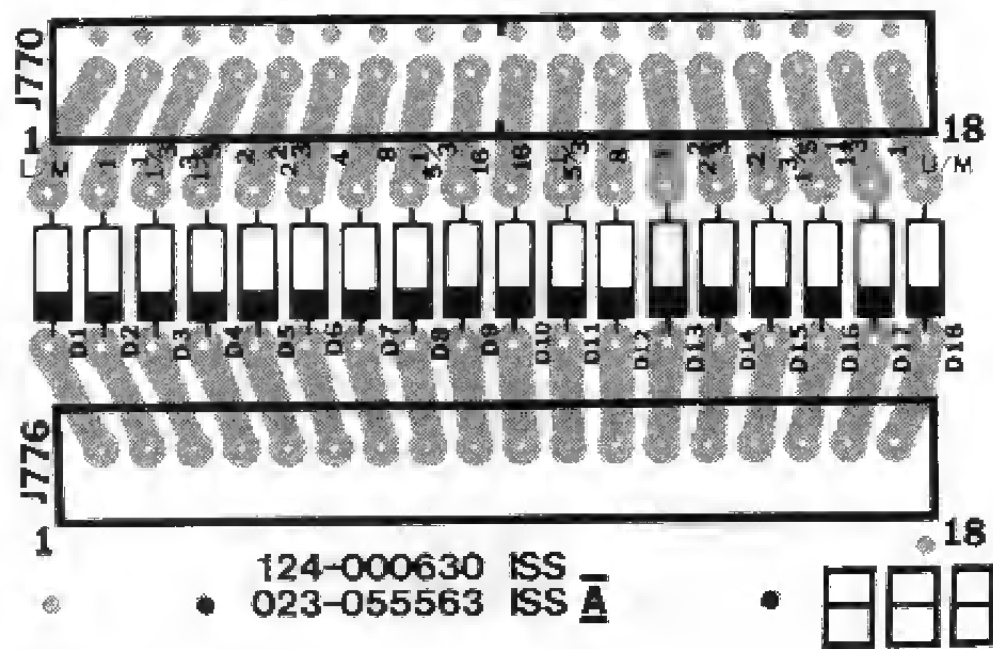


SYNTH. PERC.
FILTERS
124-000629
Q1 THRU Q9 001-021260



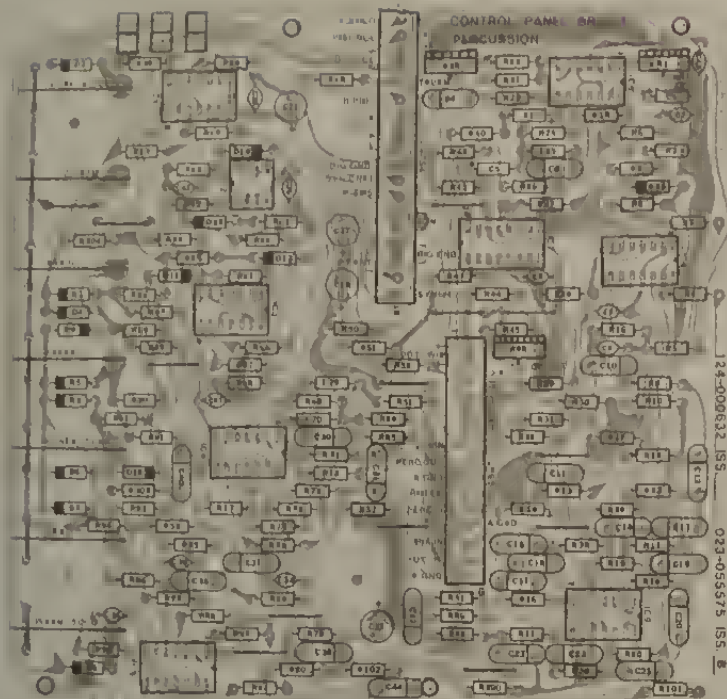
SYN PERC FILTER PWB
COPPER & LEGEND

124-000629

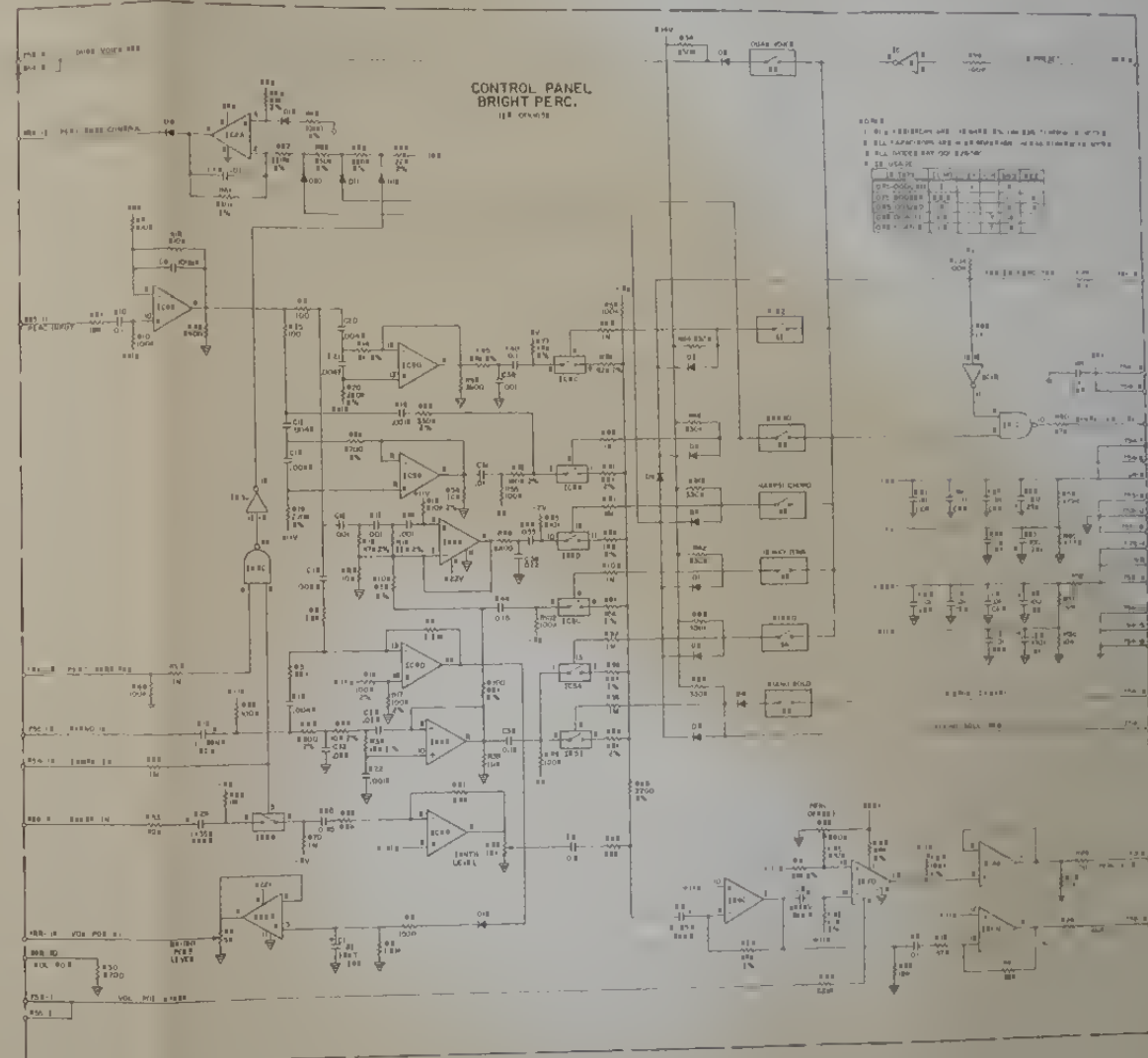


PRESET DIODE PWB
COPPER & LEGEND

124-000630



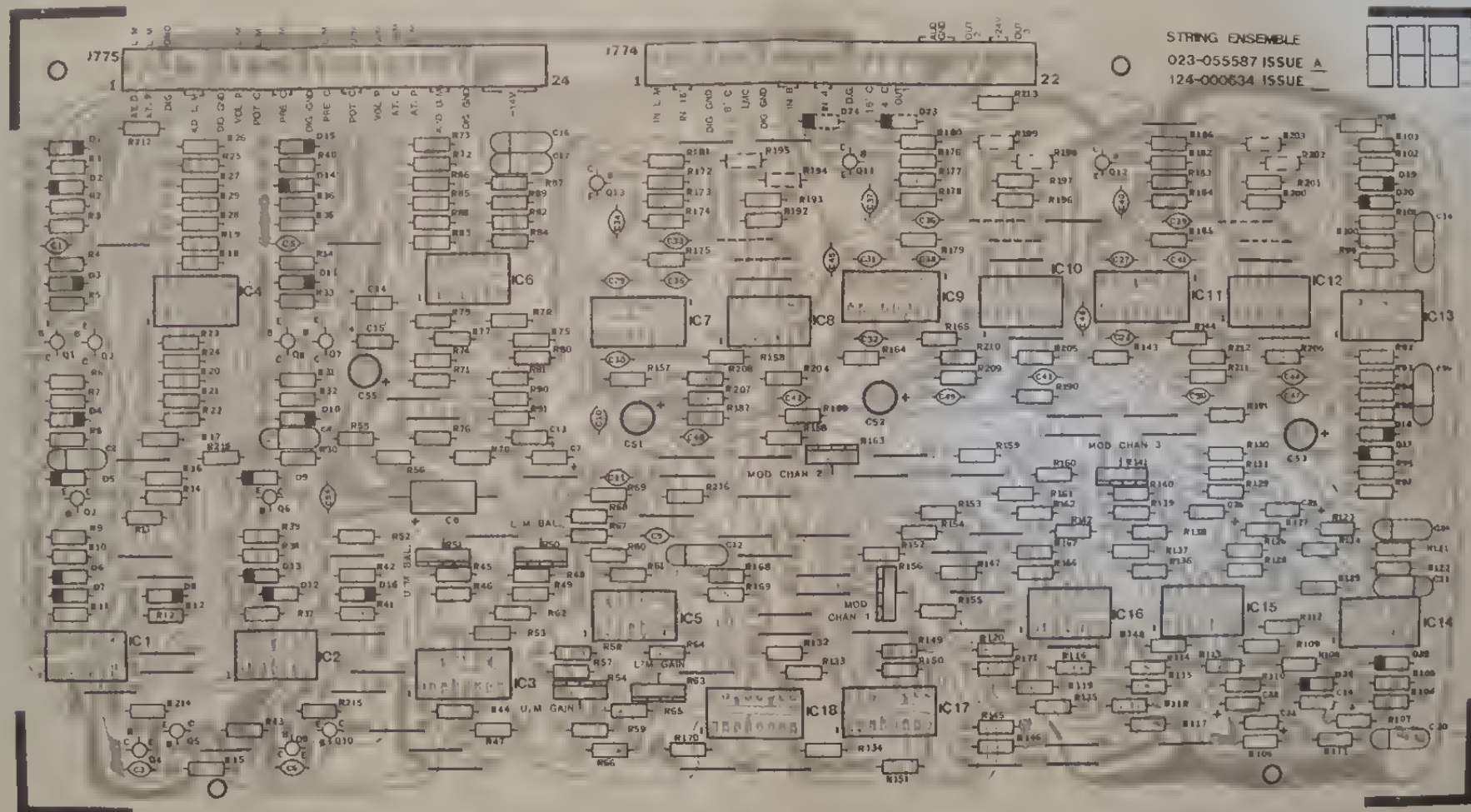
124-000632 ISS. 03-055575 ISS. 8



CONTROL PANEL BRIGHT PERC PWB
SCHEMATIC
LUMPER & JEGE ©
124-000632

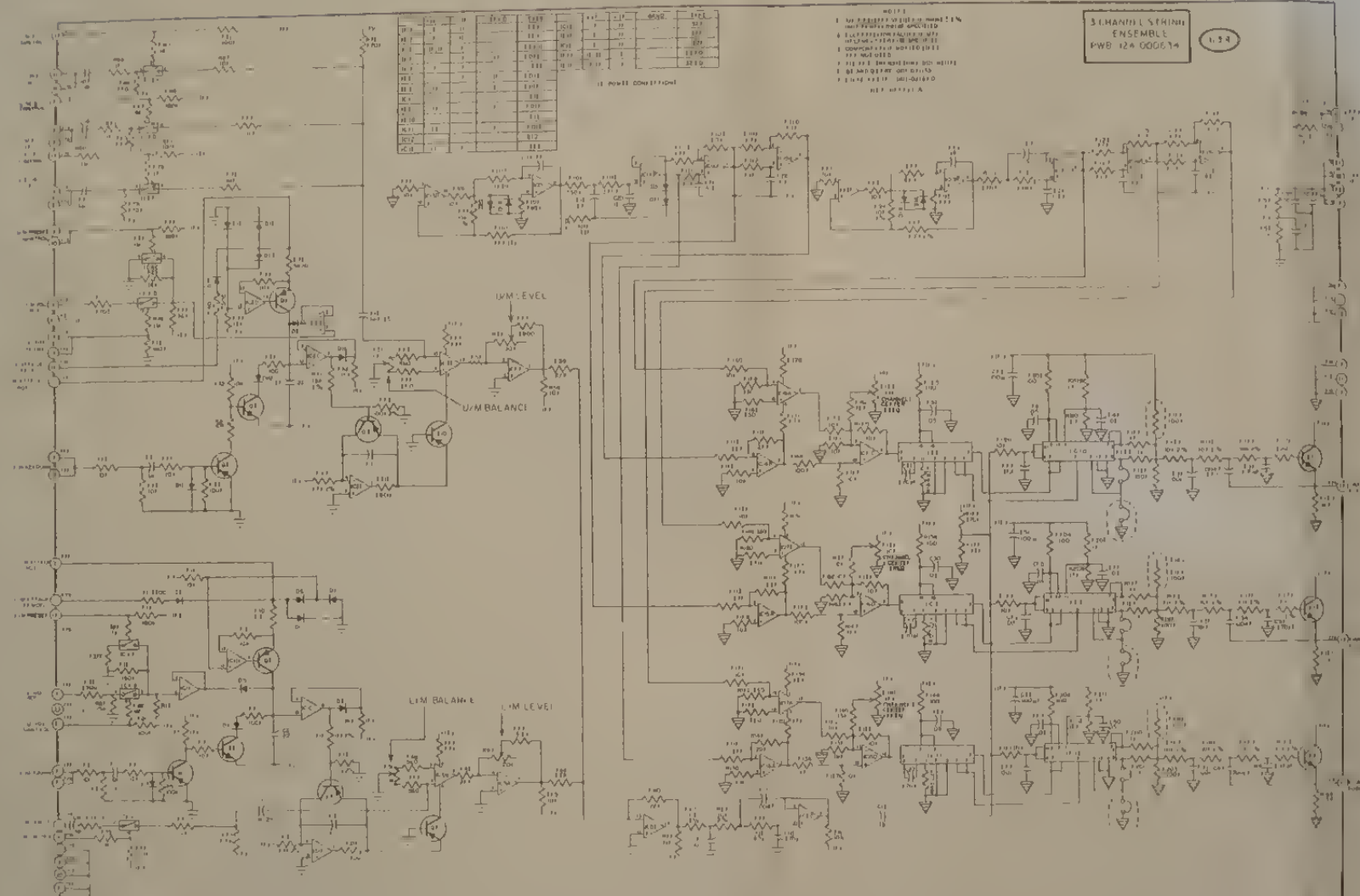
CONTROL PANEL
BRIGHT VOICE

CONTROL PANEL BRIGHT VOICING PW3
SCHEMATIC
COPPER & LEGEND
124-000633



STRING ENSEMBLE P/B
COPPER & LEGEND

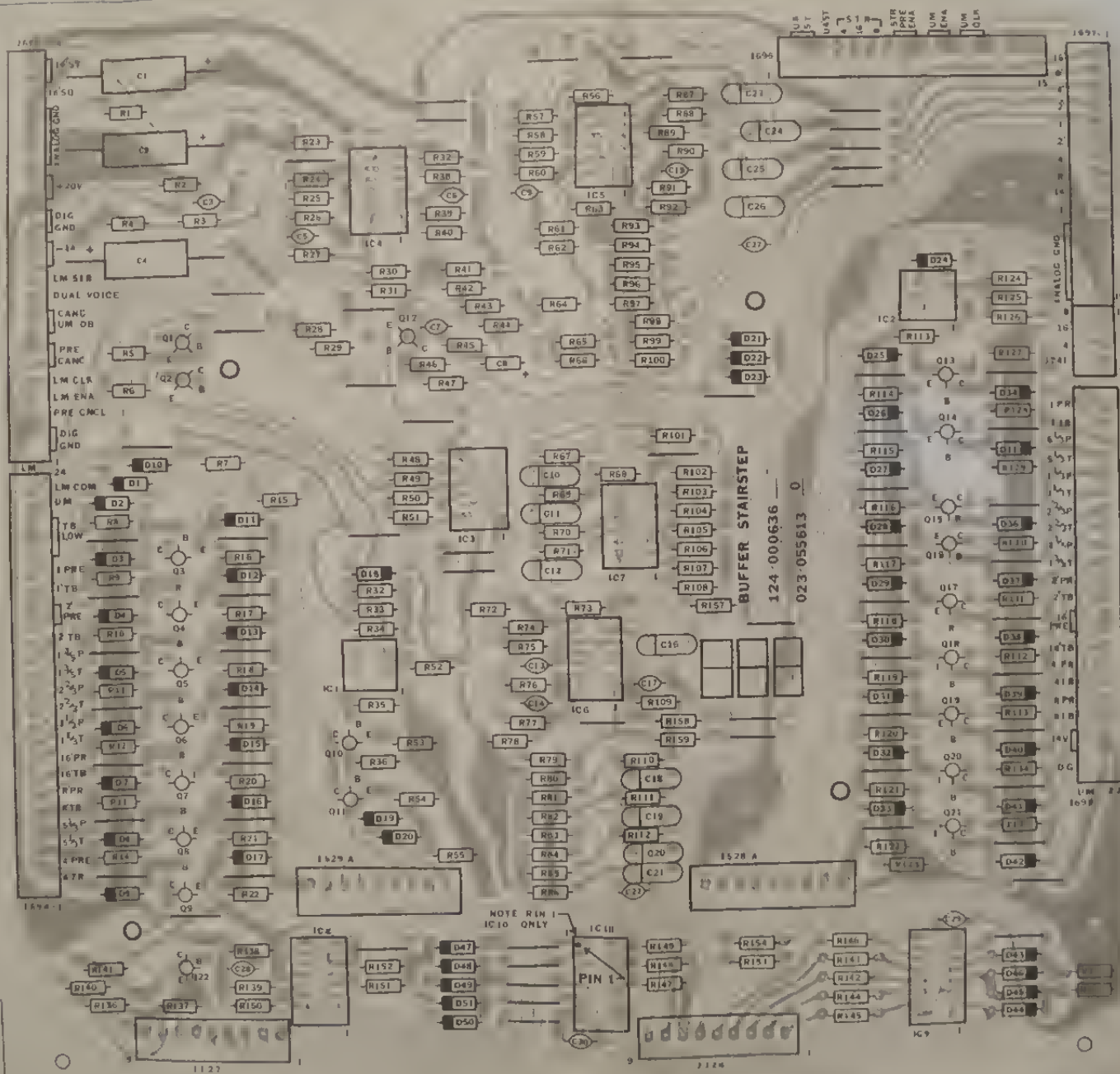
124-000634



REF	QTY	DESCRIPTION	QTY	DESCRIPTION	QTY	DESCRIPTION
1	1	100K	1	100K	1	100K
2	1	10K	1	10K	1	10K
3	1	1K	1	1K	1	1K
4	1	100	1	100	1	100
5	1	10	1	10	1	10
6	1	1	1	1	1	1
7	1	100K	1	100K	1	100K
8	1	10K	1	10K	1	10K
9	1	1K	1	1K	1	1K
10	1	100	1	100	1	100
11	1	10	1	10	1	10
12	1	1	1	1	1	1
13	1	100K	1	100K	1	100K
14	1	10K	1	10K	1	10K
15	1	1K	1	1K	1	1K
16	1	100	1	100	1	100
17	1	10	1	10	1	10
18	1	1	1	1	1	1
19	1	100K	1	100K	1	100K
20	1	10K	1	10K	1	10K
21	1	1K	1	1K	1	1K
22	1	100	1	100	1	100
23	1	10	1	10	1	10
24	1	1	1	1	1	1
25	1	100K	1	100K	1	100K
26	1	10K	1	10K	1	10K
27	1	1K	1	1K	1	1K
28	1	100	1	100	1	100
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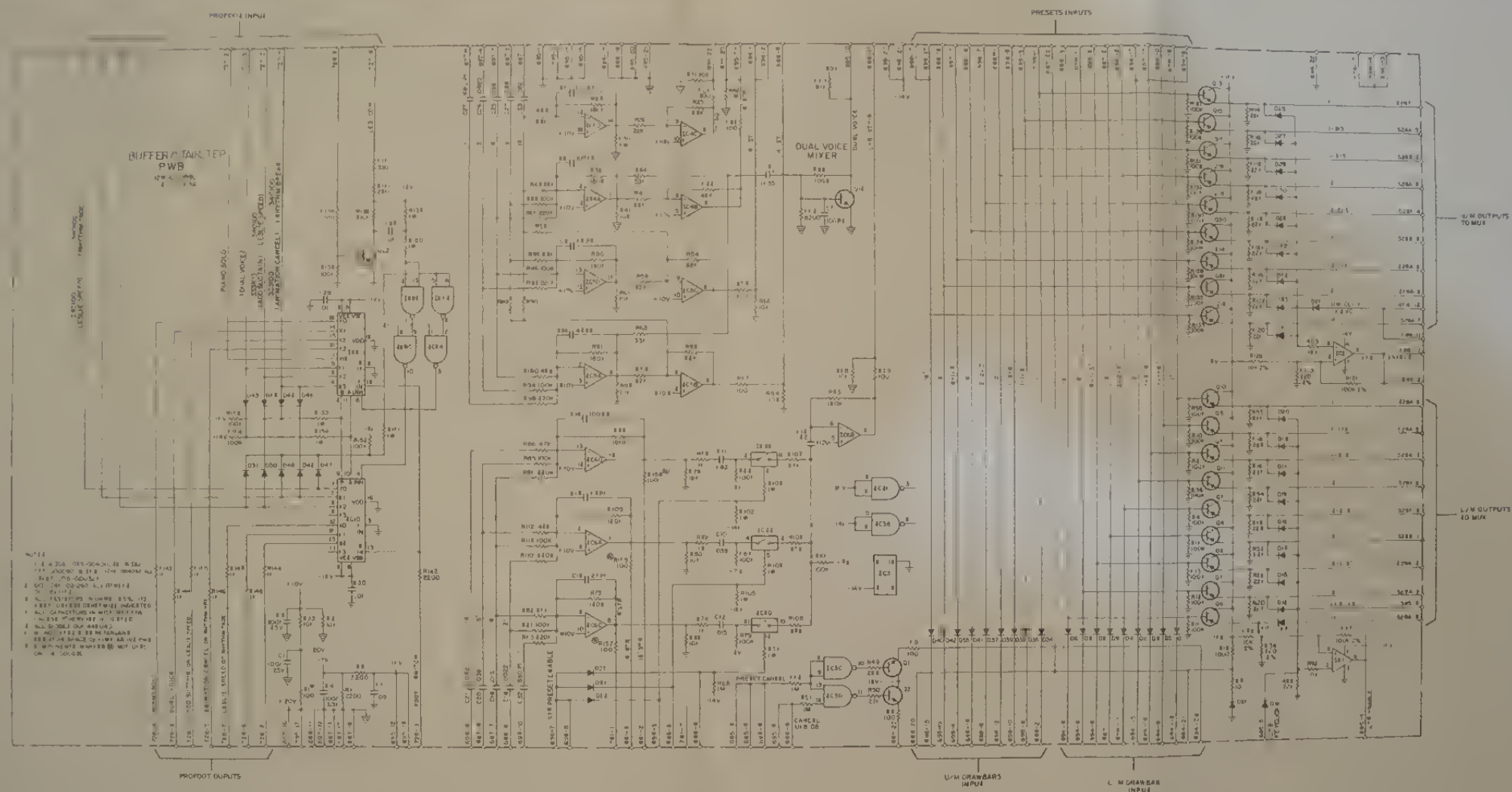
STRING ENSEMBLE PW3
ENSEMBLE
PWB 124-000634

STRING ENSEMBLE PW3
SCHEMATIC
124-000634

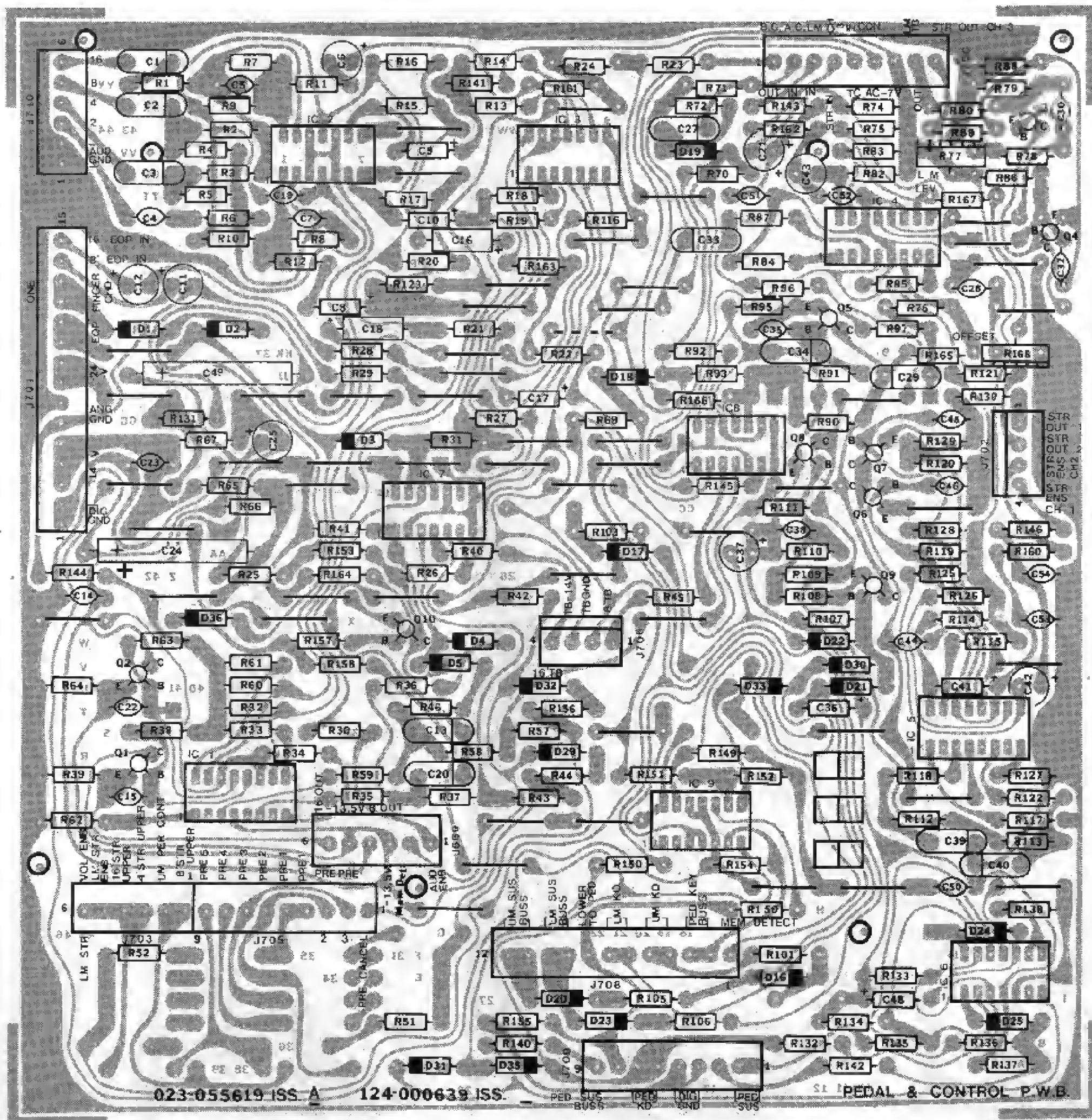


BUCKET STAIRSTEP P.M.
C. P.M. & LEGEND

24-11-6

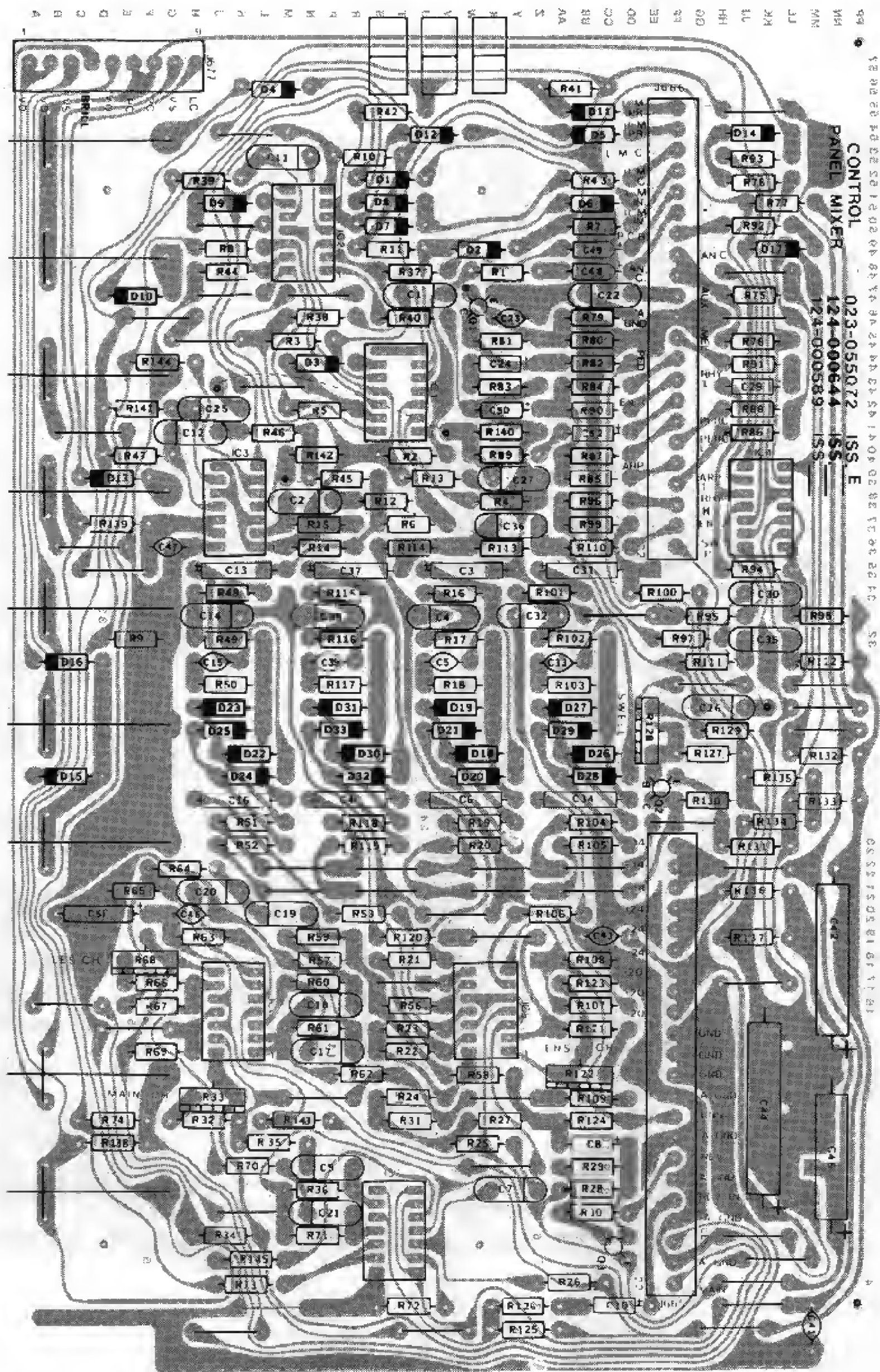


BUFFER STAIRSTEP PWB
SCHEMATIC
12-000636



PEDAL CONTROL PWB
COPPER & LEGEND

124-000639



VIBRATO

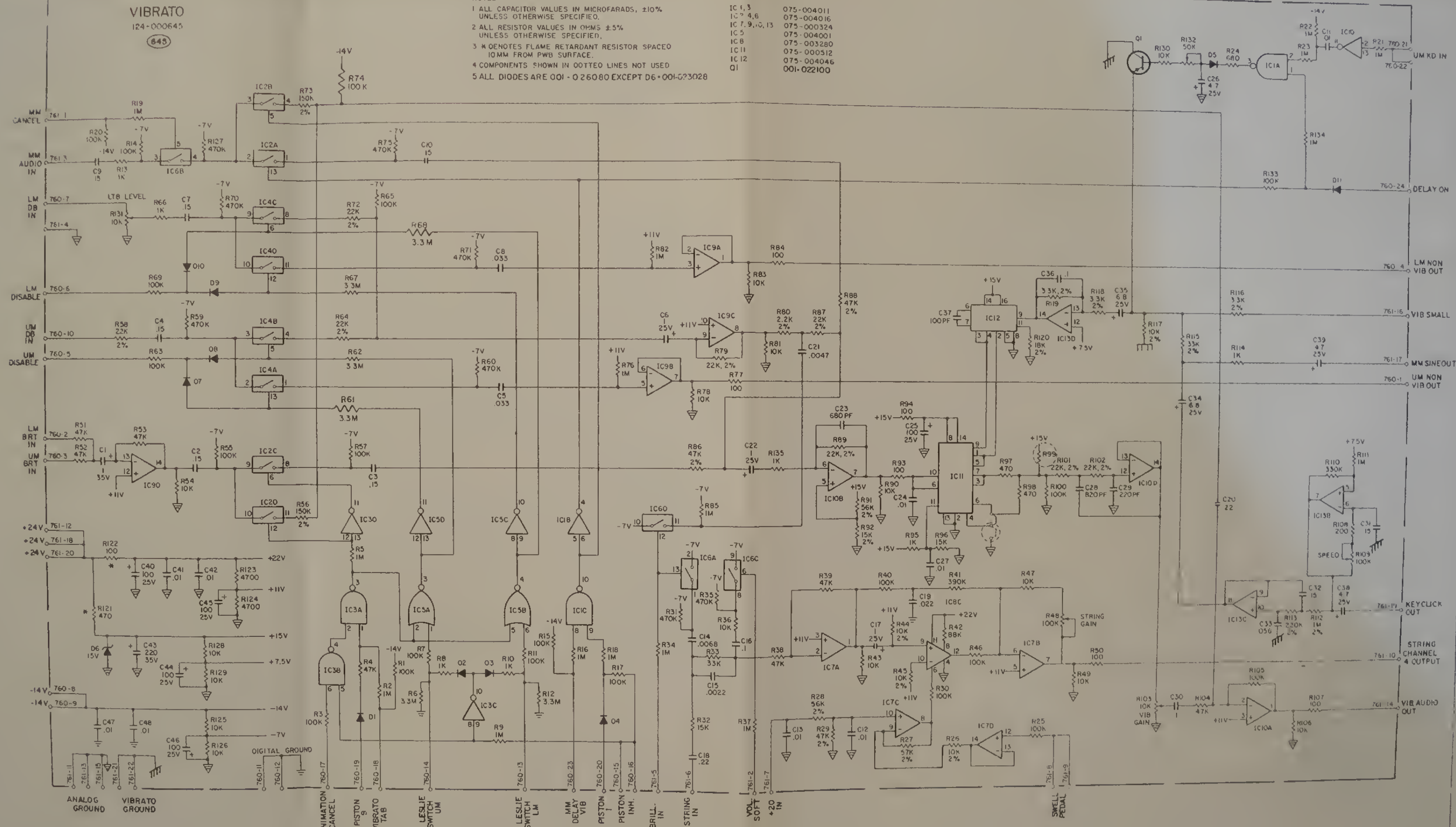
124-000645

(645)

NOTES:

- 1 ALL CAPACITOR VALUES IN MICROFARADS, $\pm 10\%$ UNLESS OTHERWISE SPECIFIED.
- 2 ALL RESISTOR VALUES IN OHMS $\pm 5\%$ UNLESS OTHERWISE SPECIFIED.
- 3 * DENOTES FLAME RETARDANT RESISTOR SPACED 10MM FROM PWB SURFACE.
- 4 COMPONENTS SHOWN IN DOTTED LINES NOT USED
- 5 ALL DIODES ARE 001-026080 EXCEPT D6-001-023028

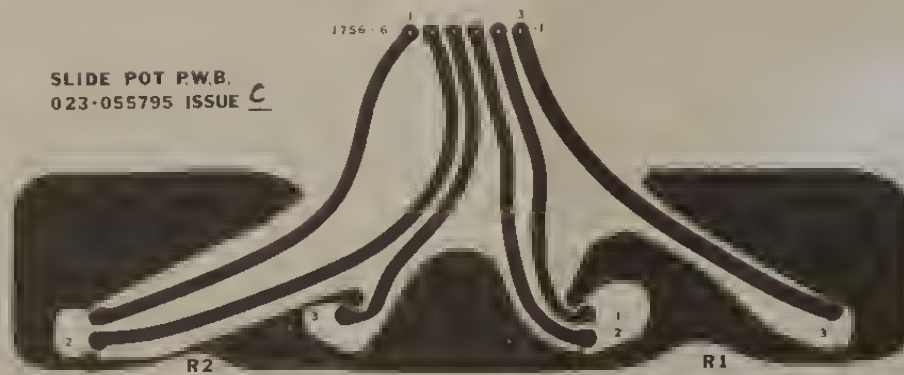
IC 1, 3 075-004011
IC 7, 9, 10, 13 075-004016
IC 5 075-004001
IC 8 075-003280
IC 11 075-000512
IC 12 075-004046
Q1 001-022100



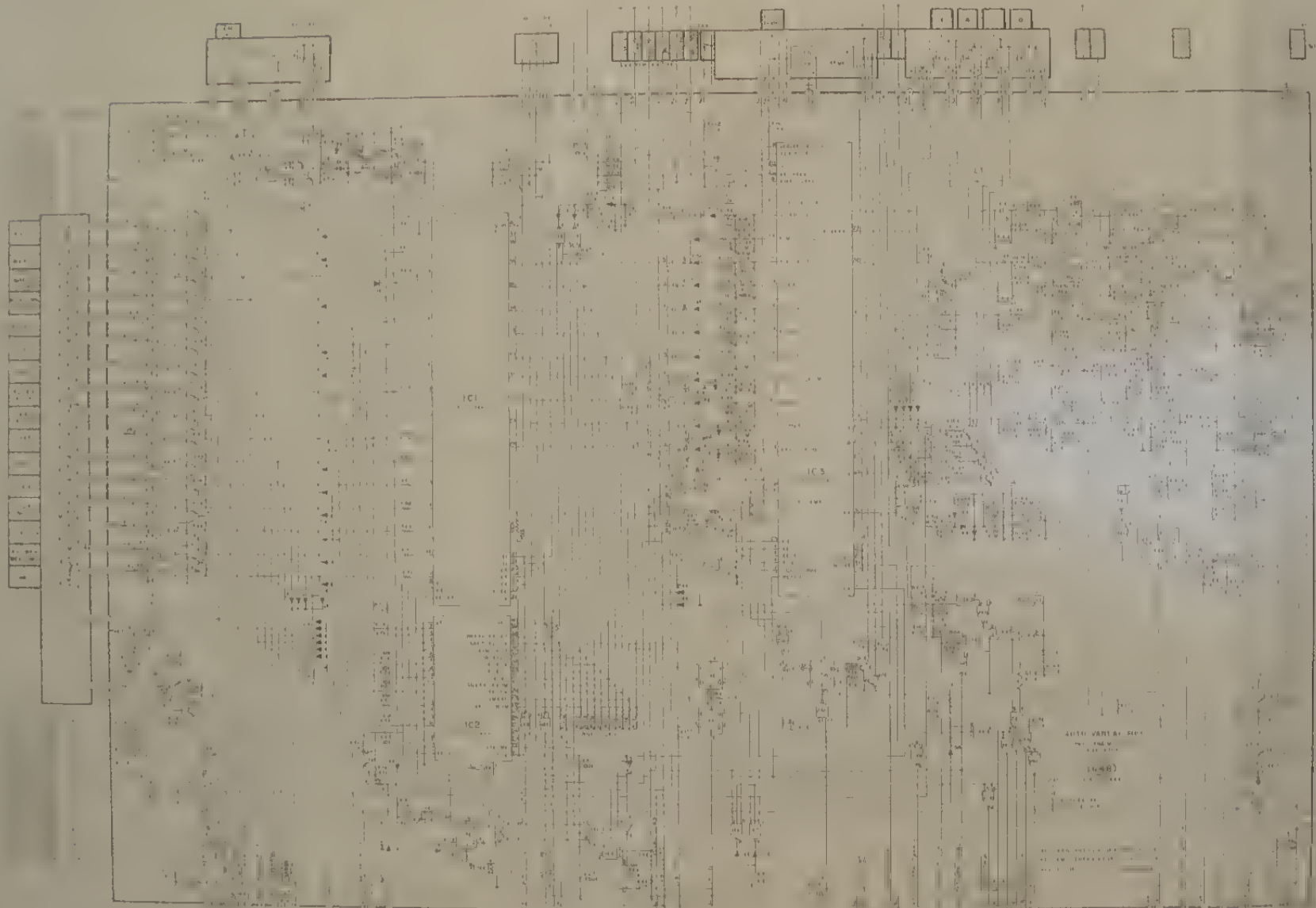
VIBRATO PWB
SCHEMATIC

124-000645

SLIDE POT P.W.B.
023-055795 ISSUE C



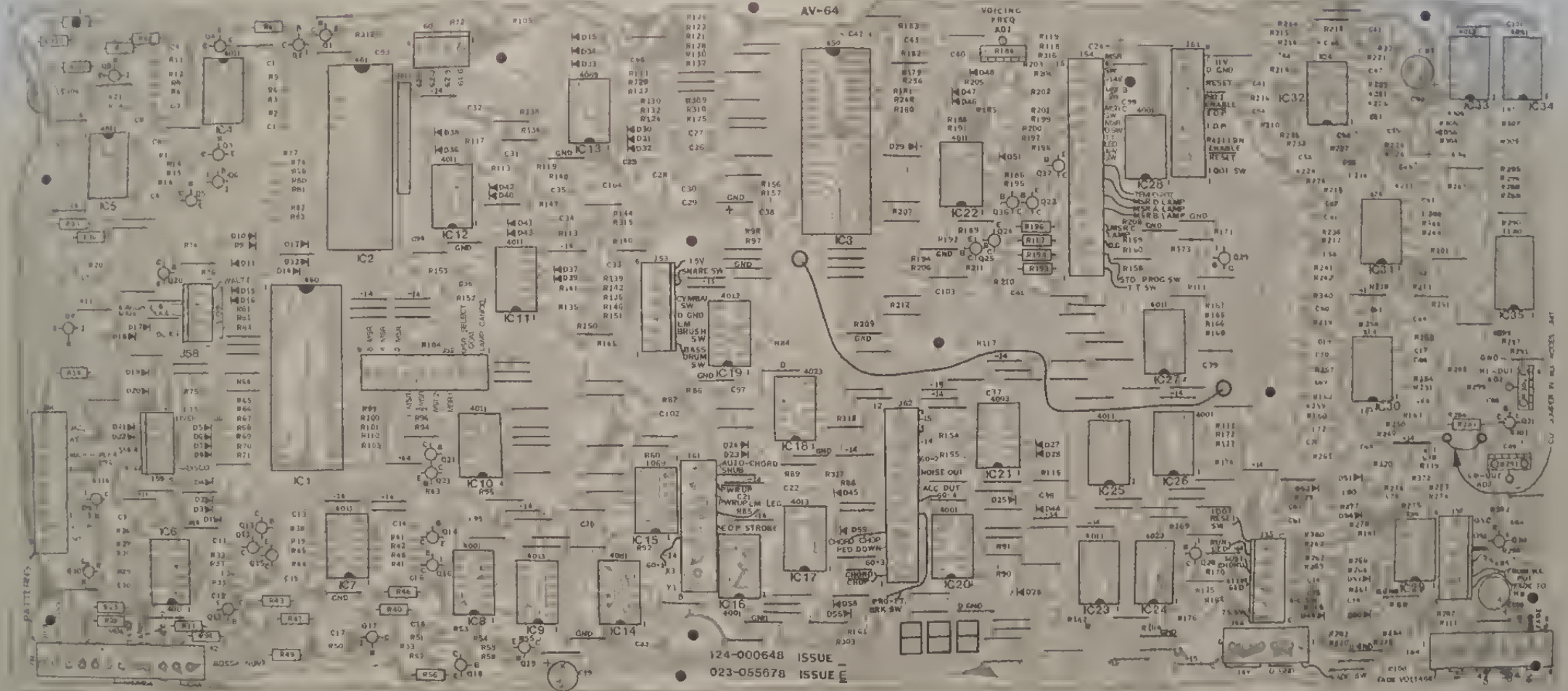
SLIDE POT P.W.B.
023-055795
J. G.



AUTO VARI 64 P/B
SCHEMATIC
124-000-48

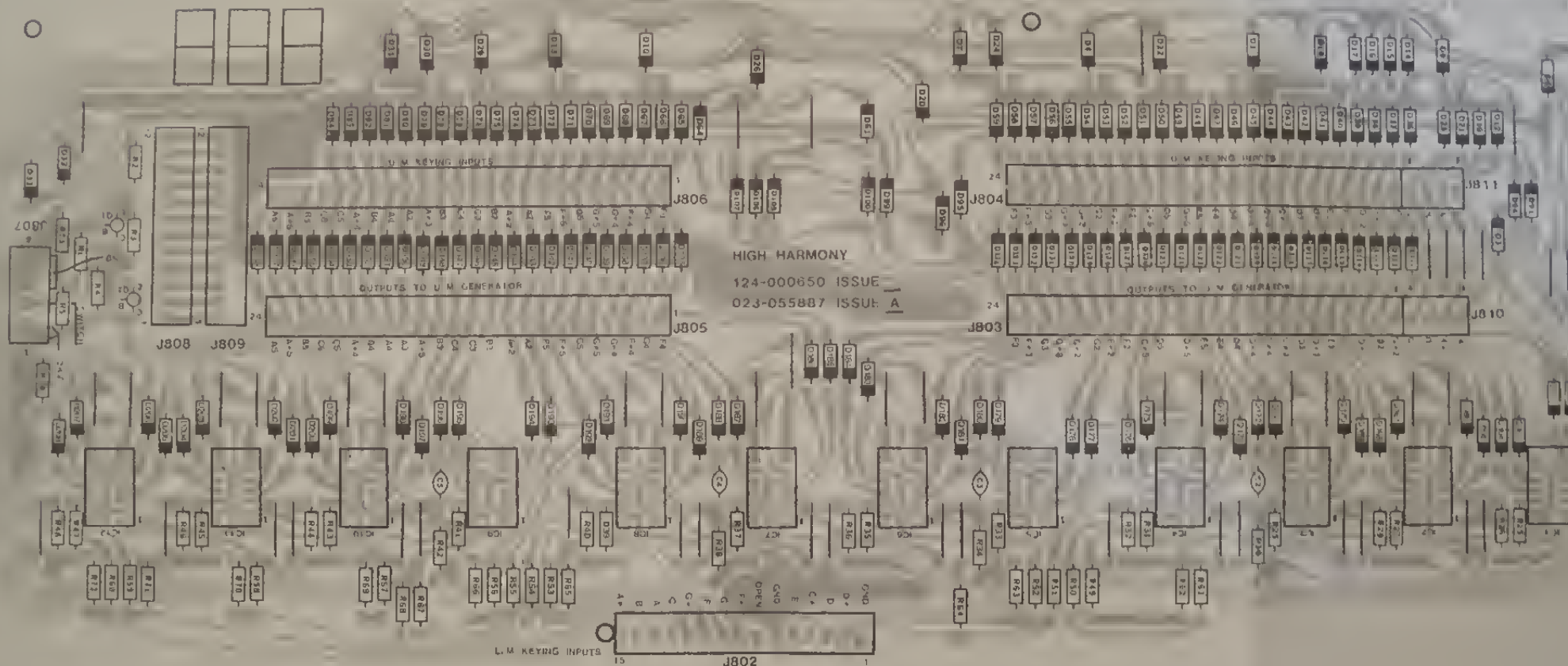
AV-64

124-000648 ISSUE
023-055678 ISSUE E

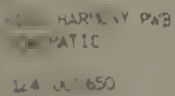


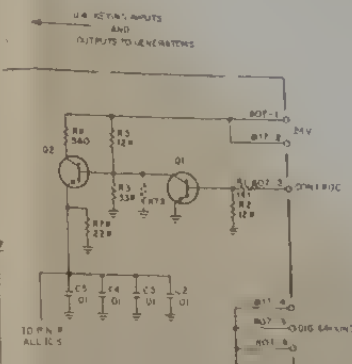
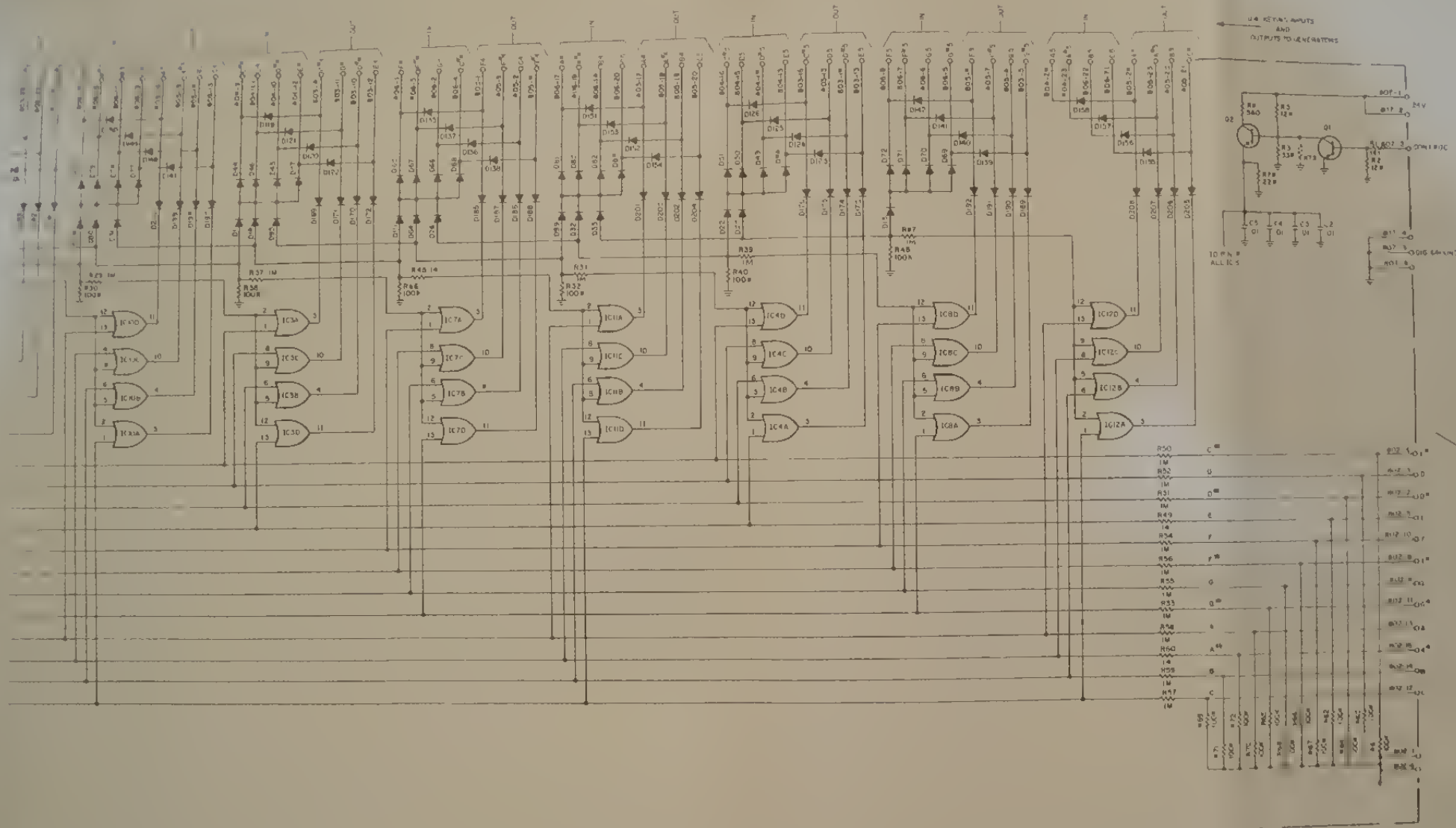
AV-64
124-000648

124-000648



HIGH HARMONY PWB
COPPER & LEGEND
124 000650



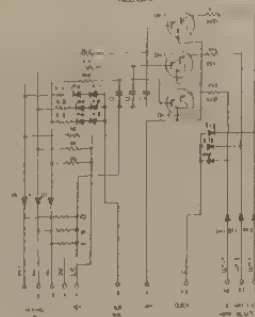


HIGH HARMONY PWD
SCHEMATIC
124-000650



653

124-000715
TYPICAL PRINTED NETWORK (COUPLET)
(percussion)

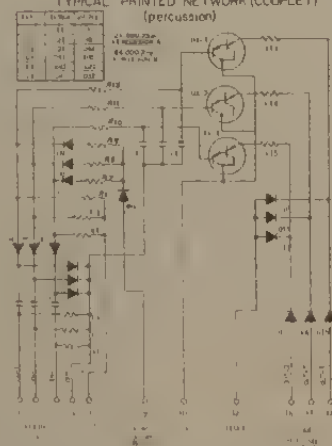


124-000715 SUSTAIN COUPLATE PWB
(REPLACES 124-000605 OR 054-054315 COUPLES)

B1-B3 TRANSISTOR 001-022103
D1 D15 SIG DIODE 001-226080
C1-C3 CAP .22 MFD 438-210292

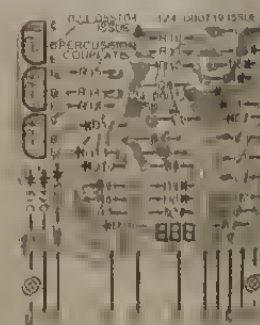


TYPICAL PRINTED NETWORK (COUPLET)
(percussion)



124-000719 PERC B COUPLATE PWB
(REPLACES 124-000607 OR 058-054319 COUPLES)

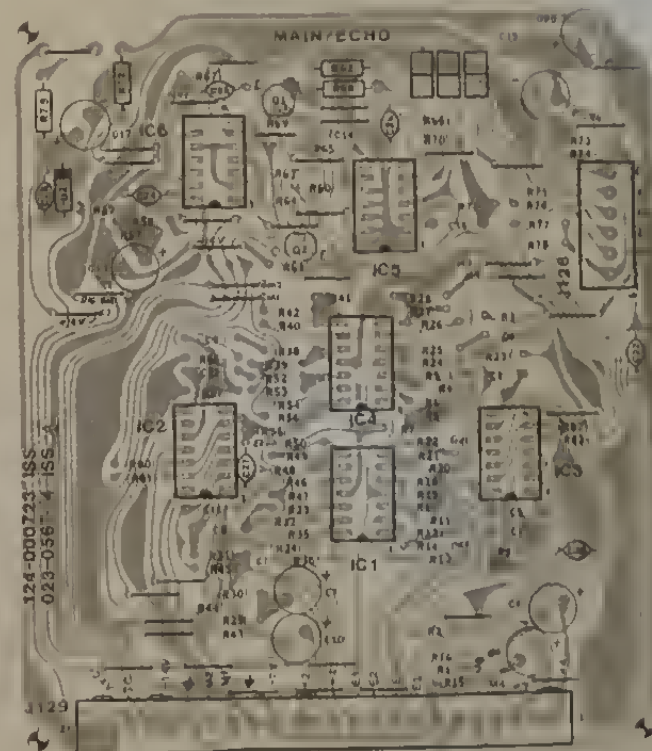
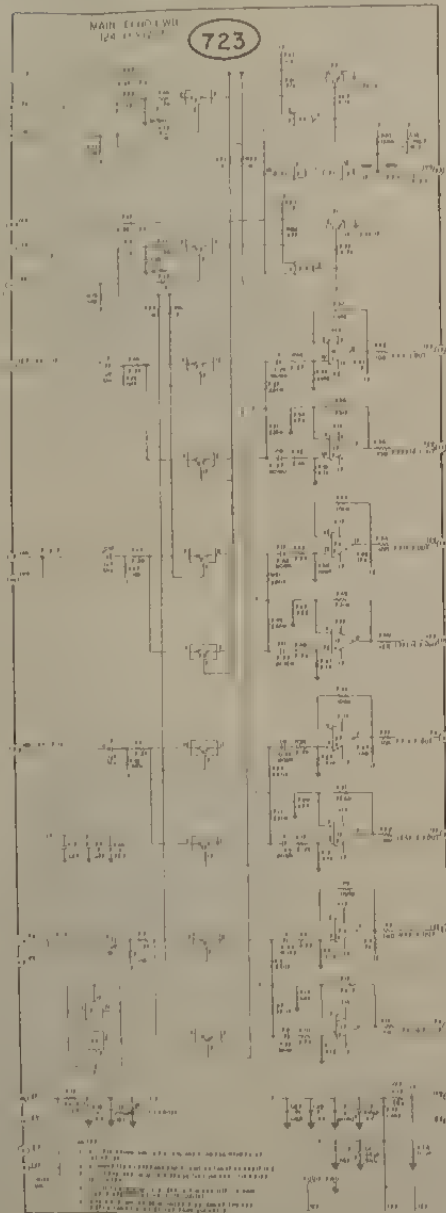
B1-B3 TRANSISTOR 001-022103
D1-D16 SIG DIODE 001-226080
C1 CAP .15 MFD 438-210272
C2 CAP .10 MFD 438-210252
C3 CAP .068 MFD 438-210232
C4 CAP .015 MFD 438-210152
C5 CAP .022 MFD 438-210172
C6 CAP .033 MFD 438-210192

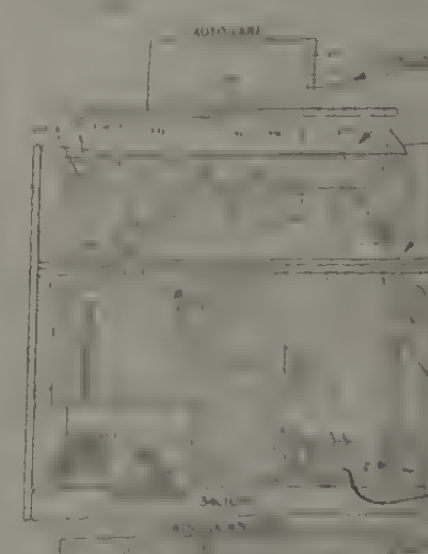
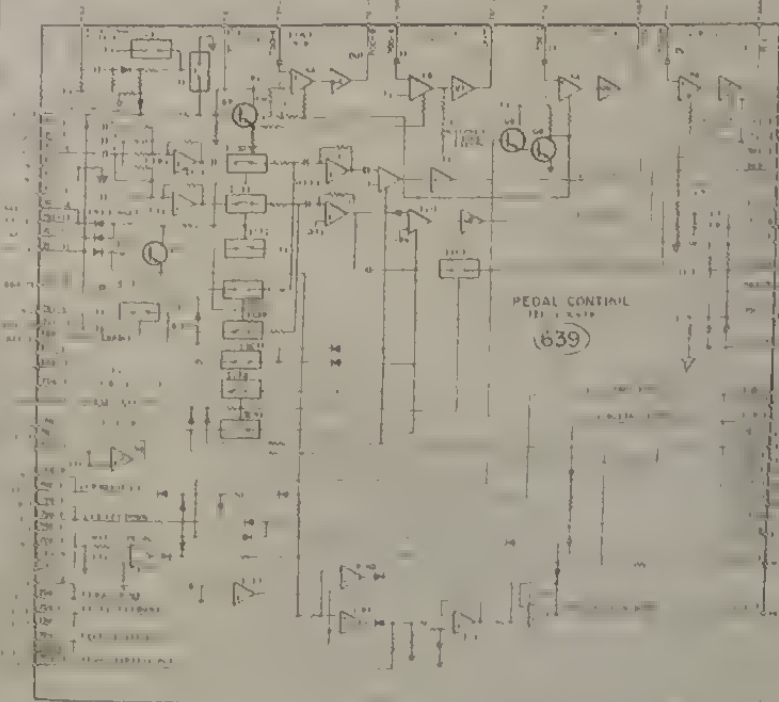
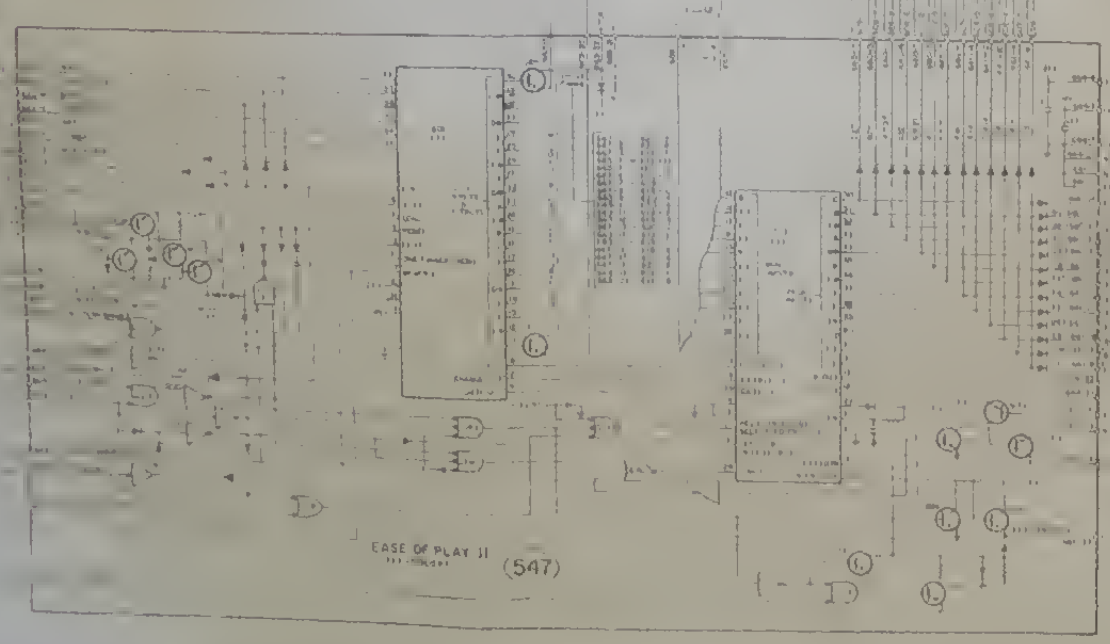
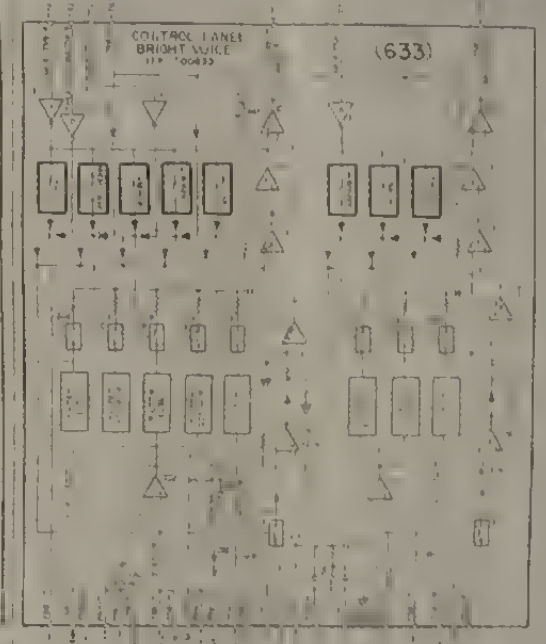
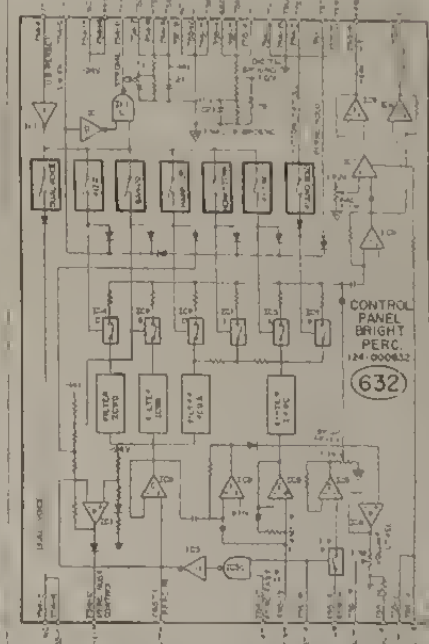
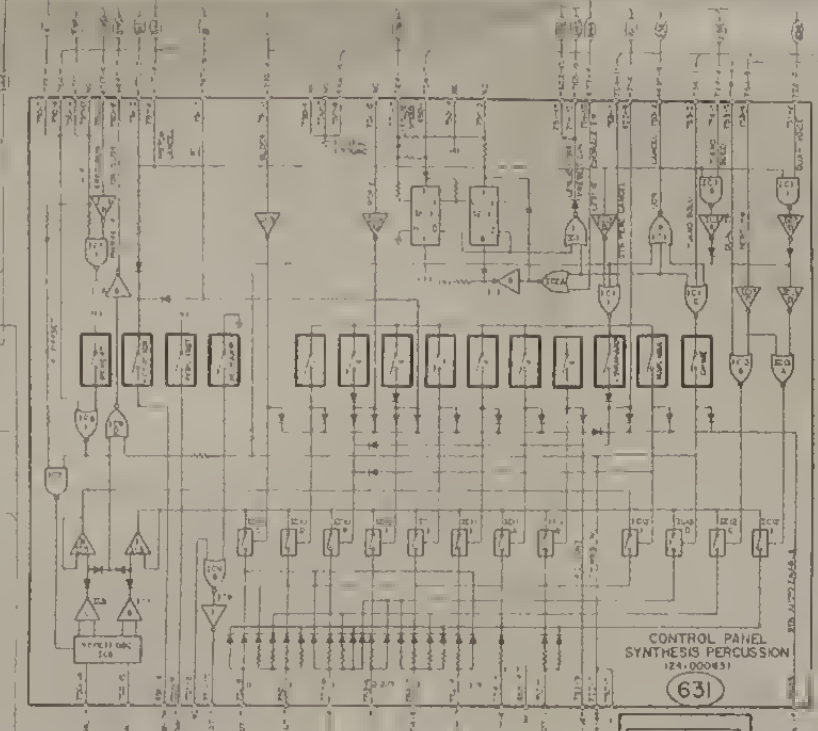
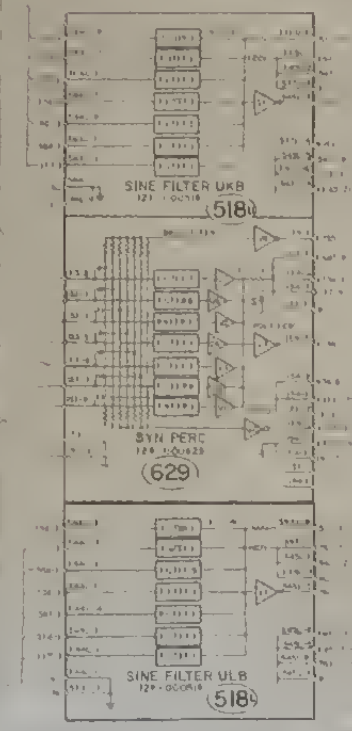
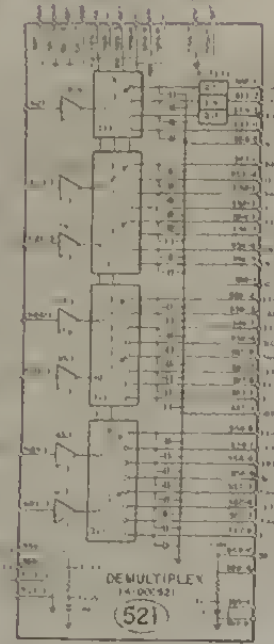
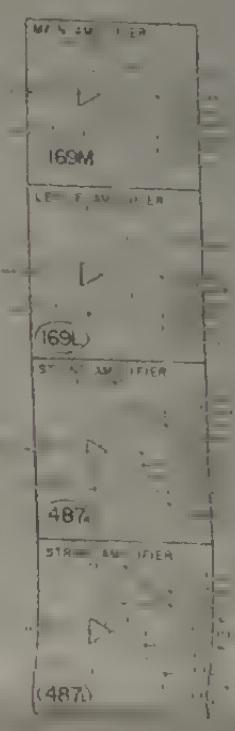
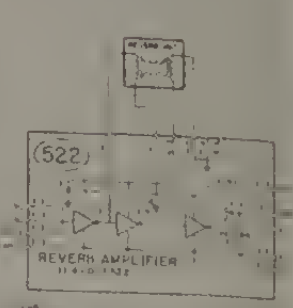
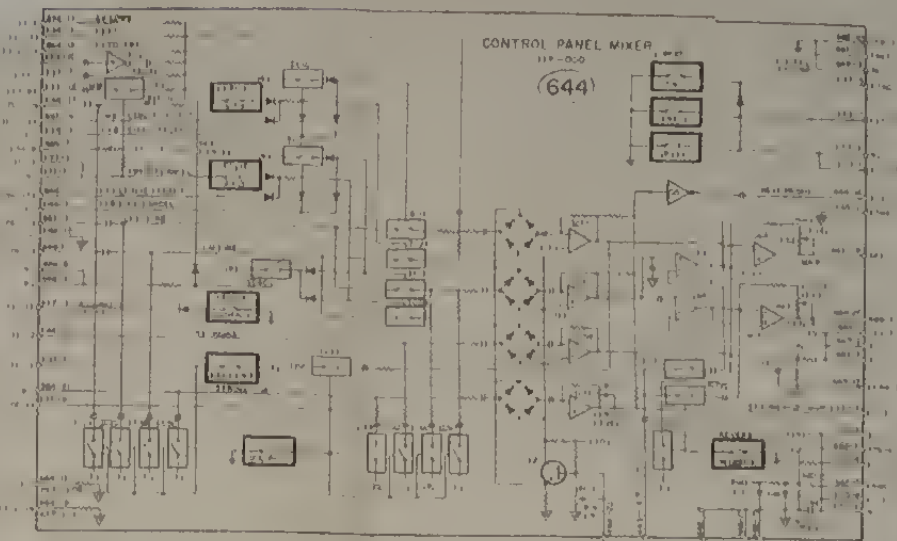
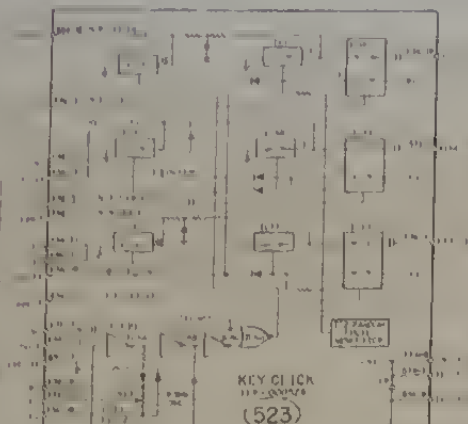
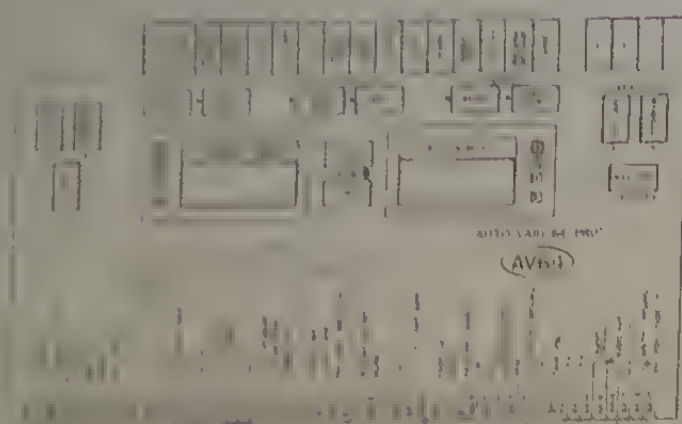


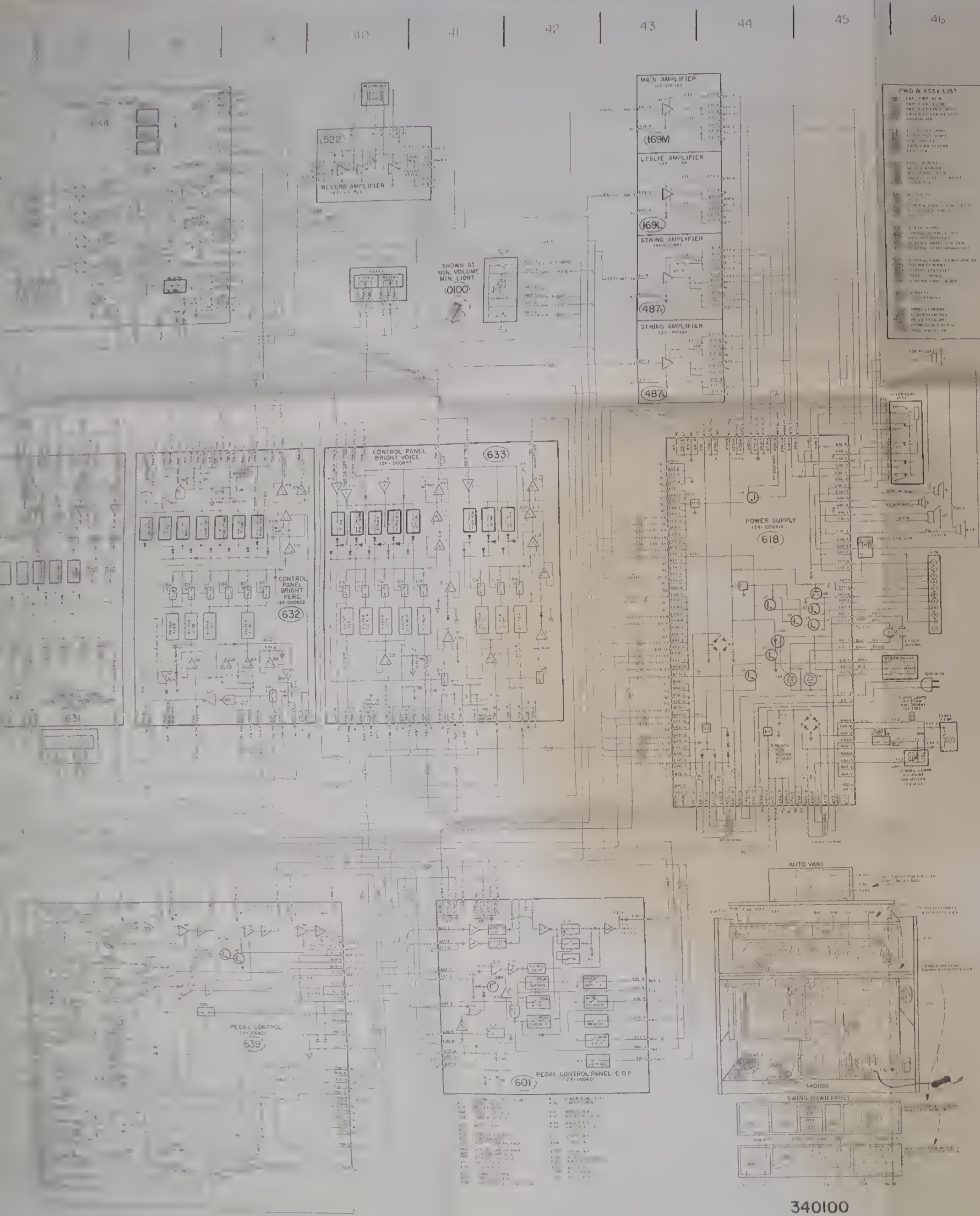
124-000720 PERC A COUPLATE PWB
(REPLACES 124-000606 OR 058-054320 COUPLES)

B1-B3 TRANSISTOR 001-022103
D1-D16 SIG DIODE 001-226080
C1-C3 CAP .22 MFD 438-210292
C4-C6 CAP .047 MFD 438-210212

SUSTAIN KEYS COUPLATE PWB
PERC KEYS COUPLATE PWB
SCHEMATICS
COPPIERS & LEGENDS
124-000715, 719, 720





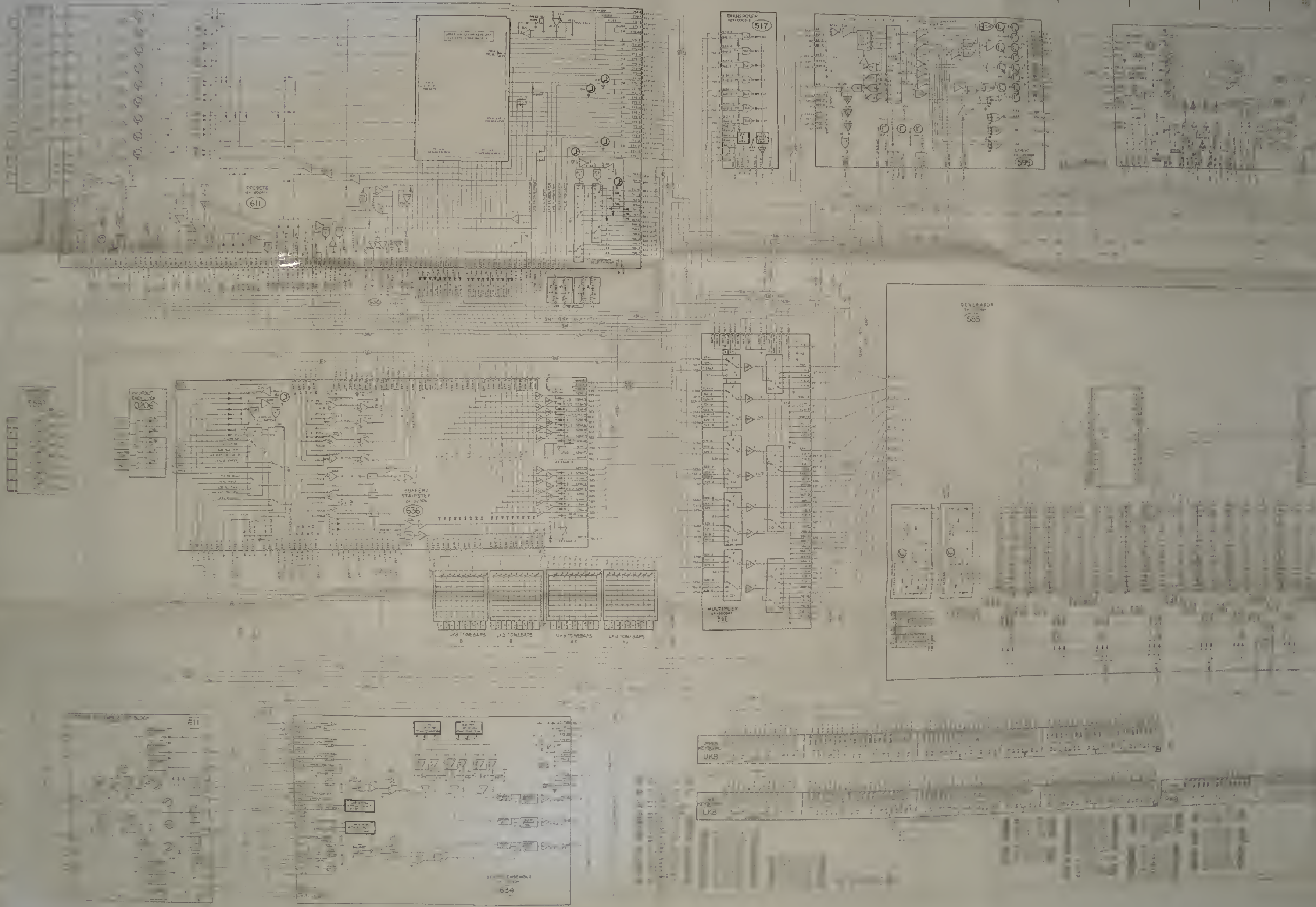


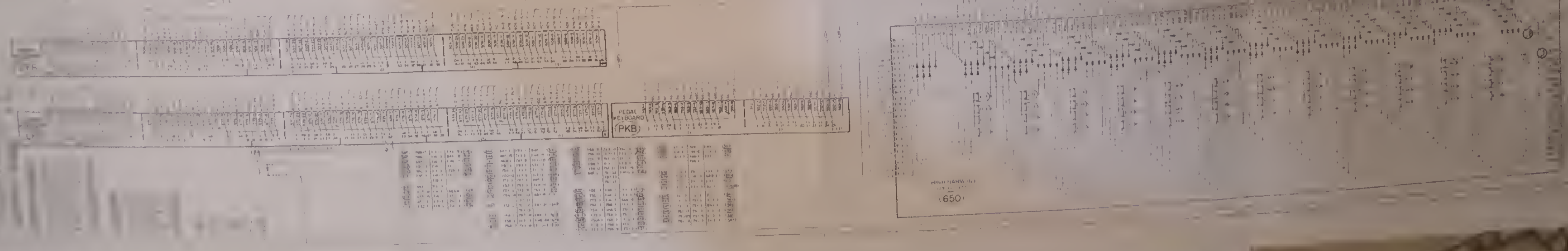
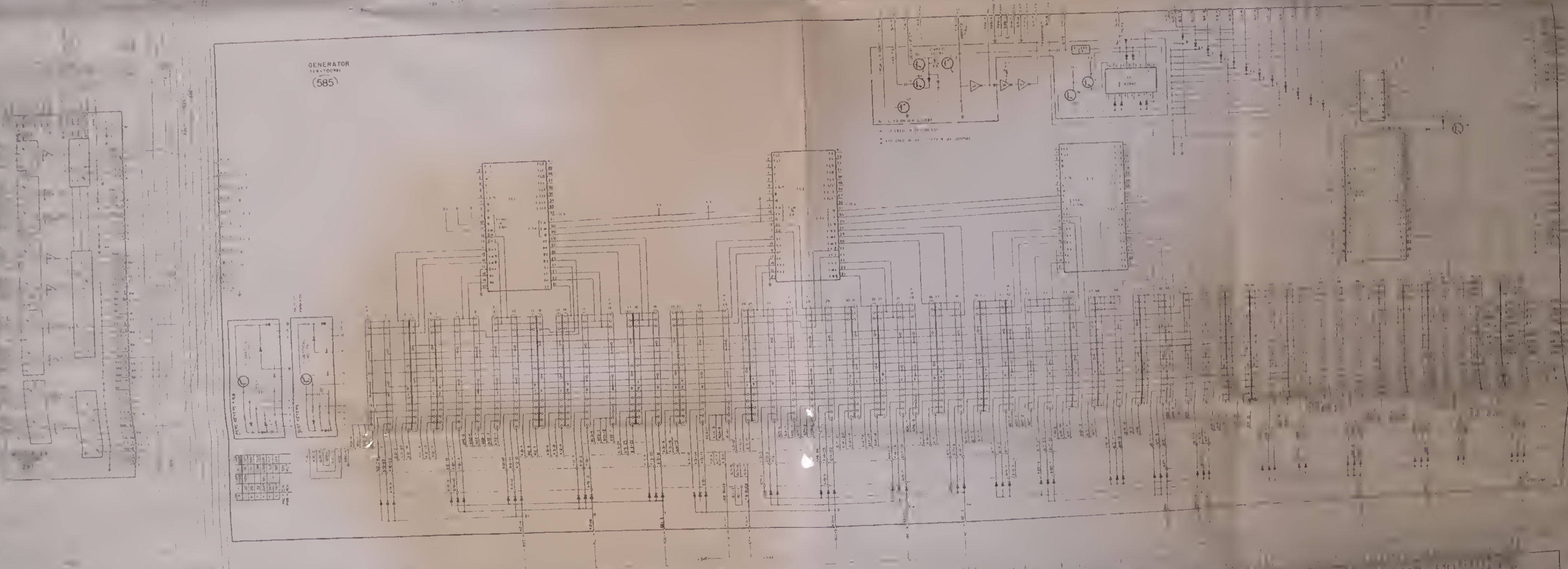
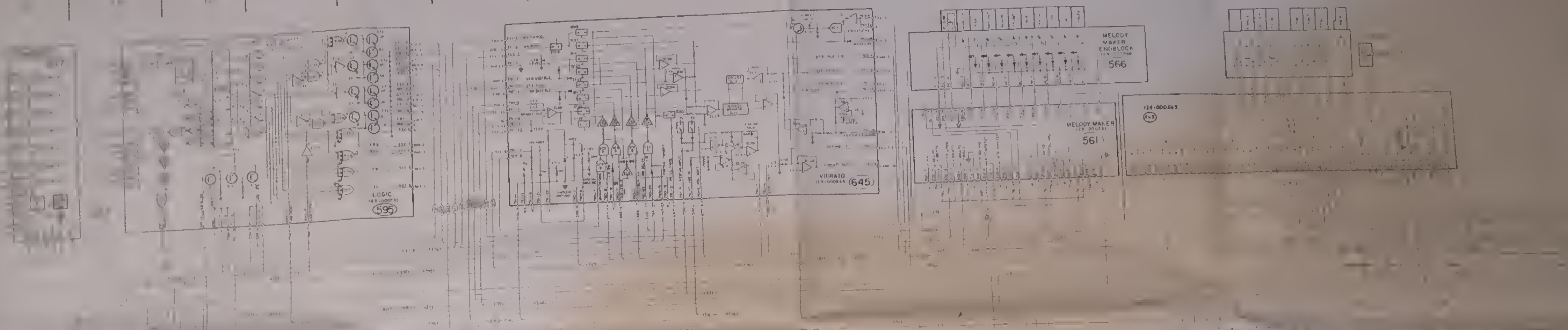
A
B
C
D
E
F
G
H
I
J

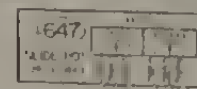
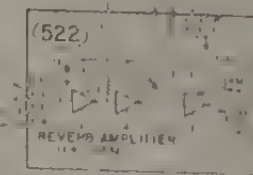
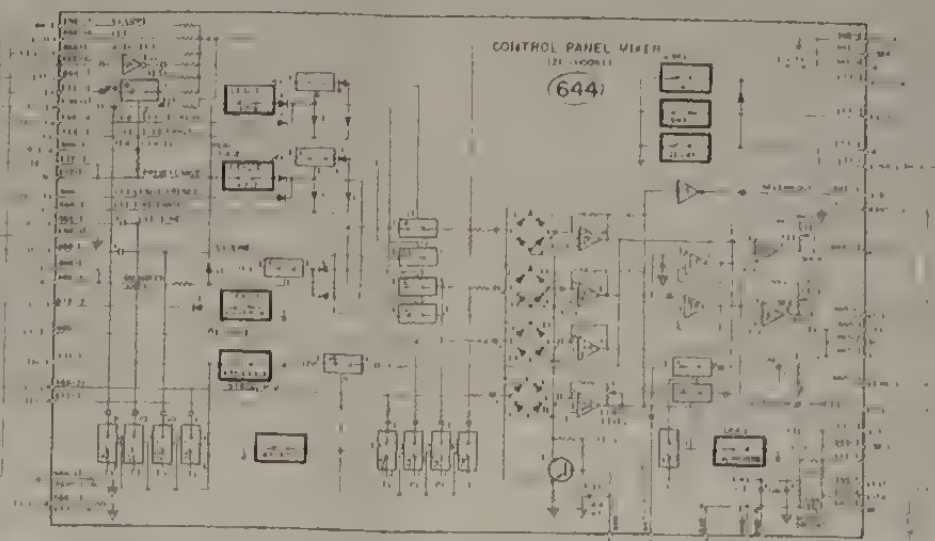
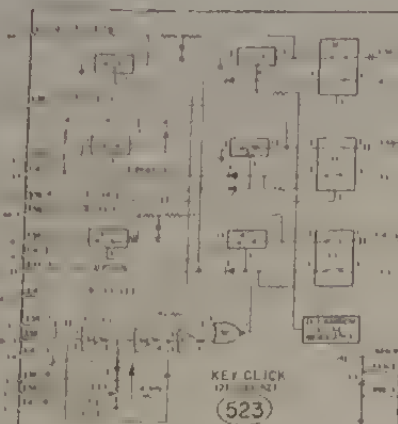
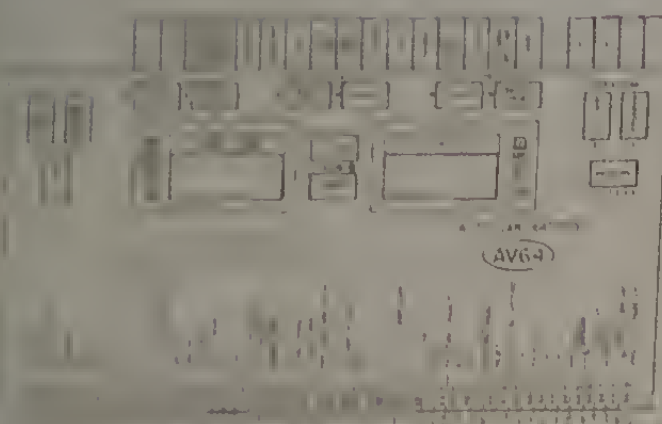
Logic & Control
Wiring Diagram



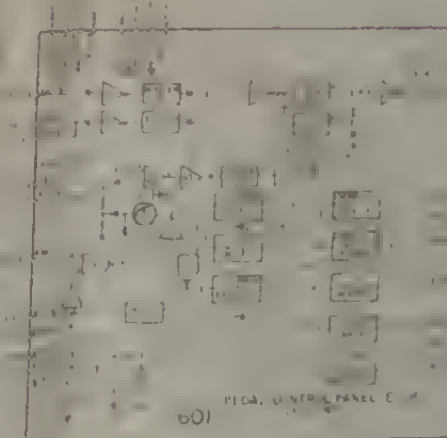
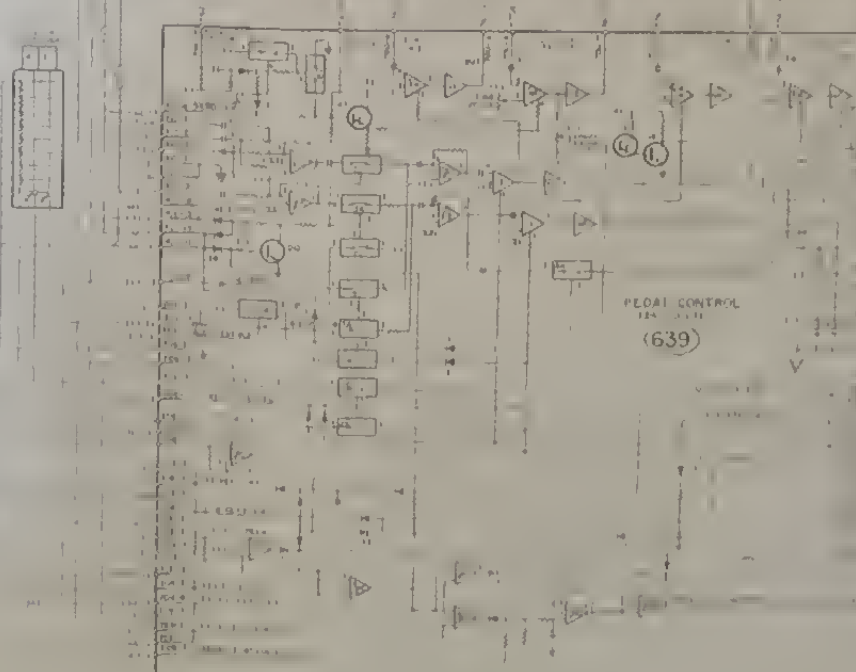
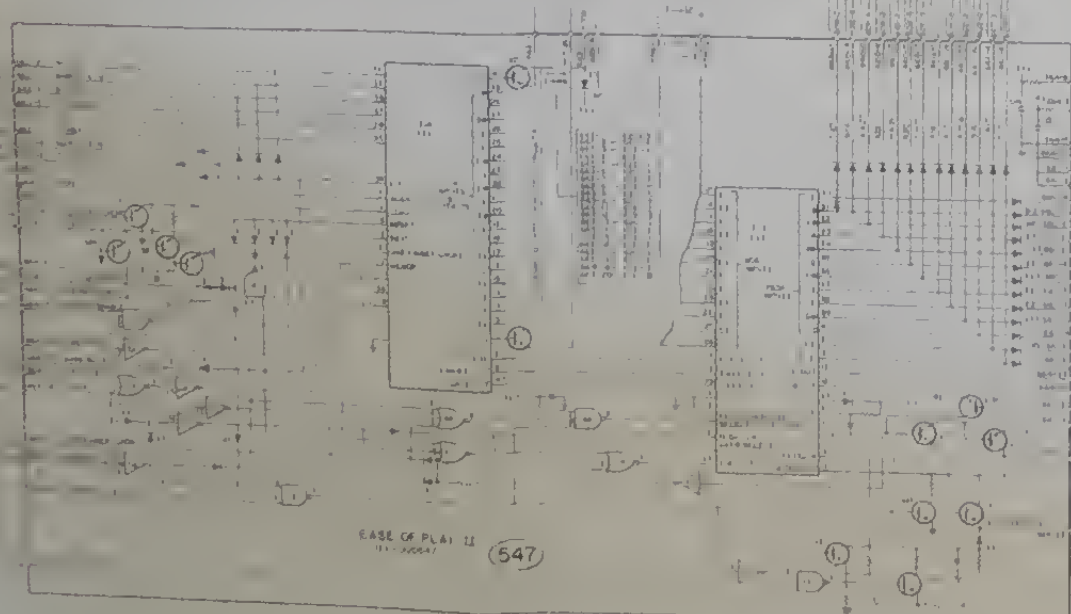
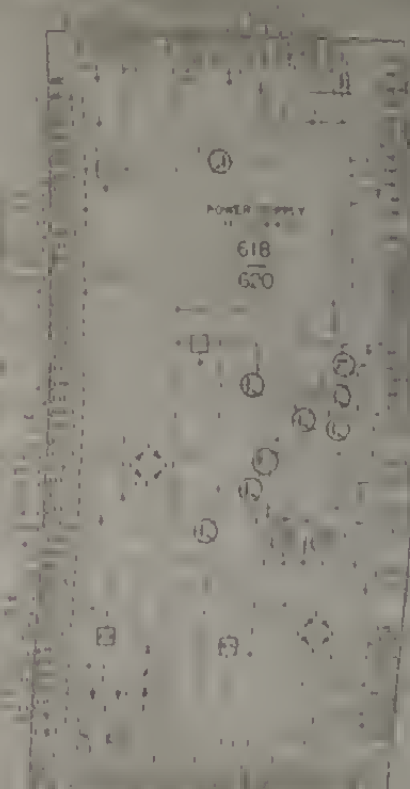
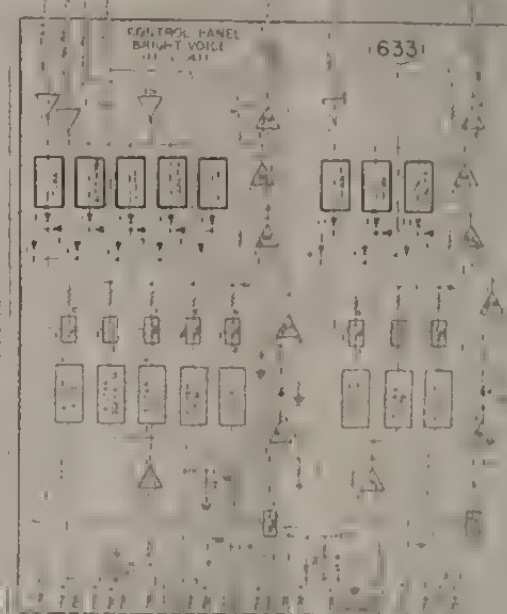
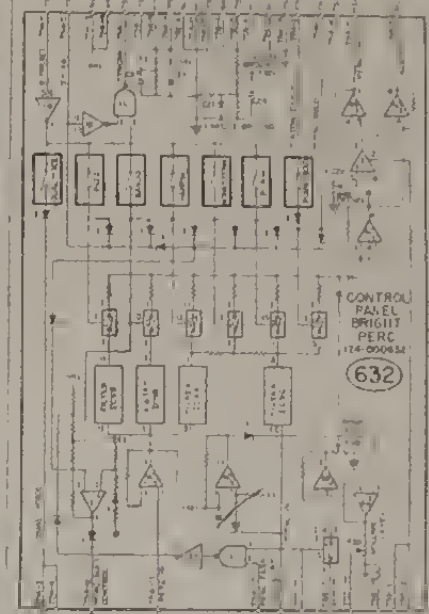
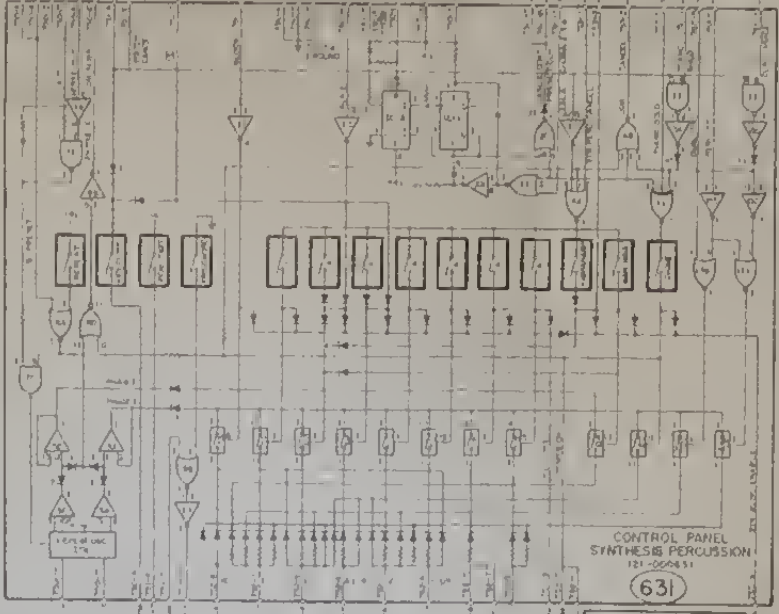
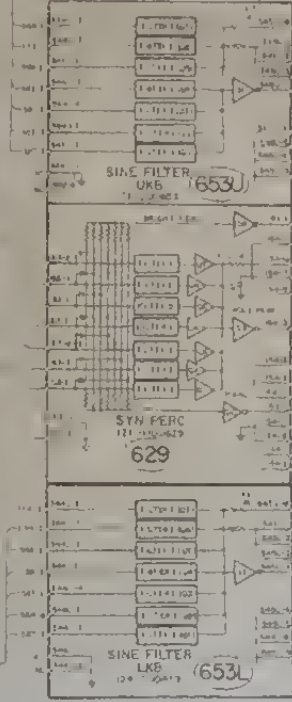
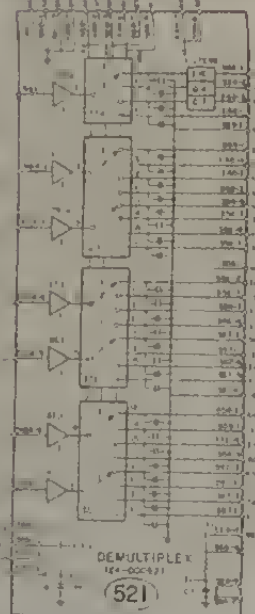
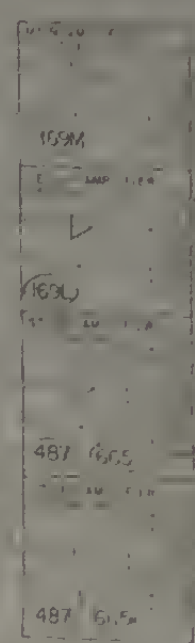
Elegante
340107

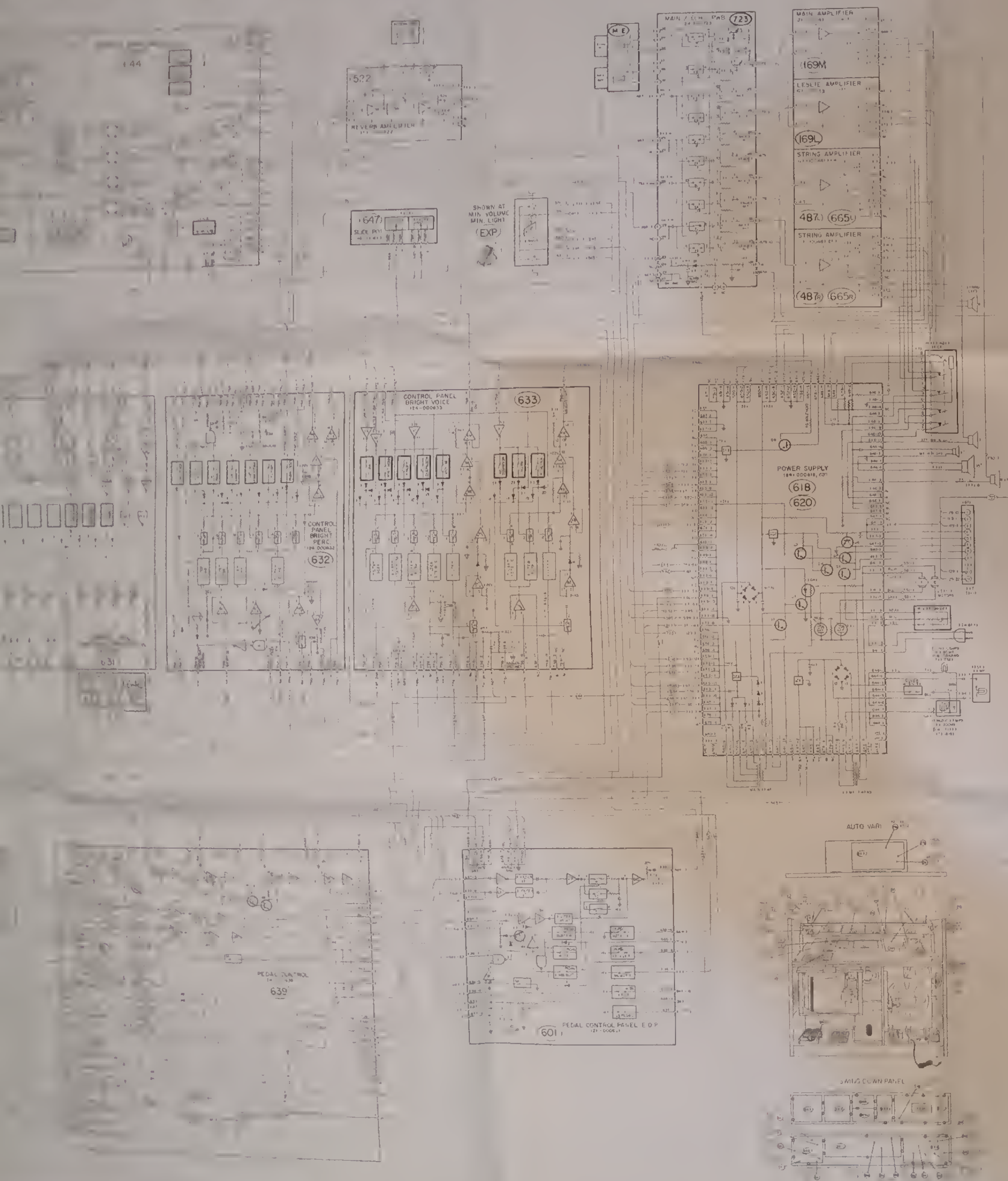






SHOWN AT
MIN. VOLTAGE
MIN. & MAX.
EXP.





A

B

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D

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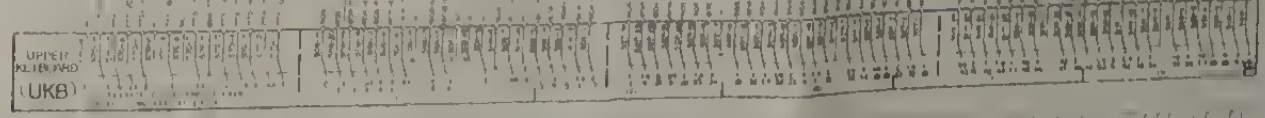
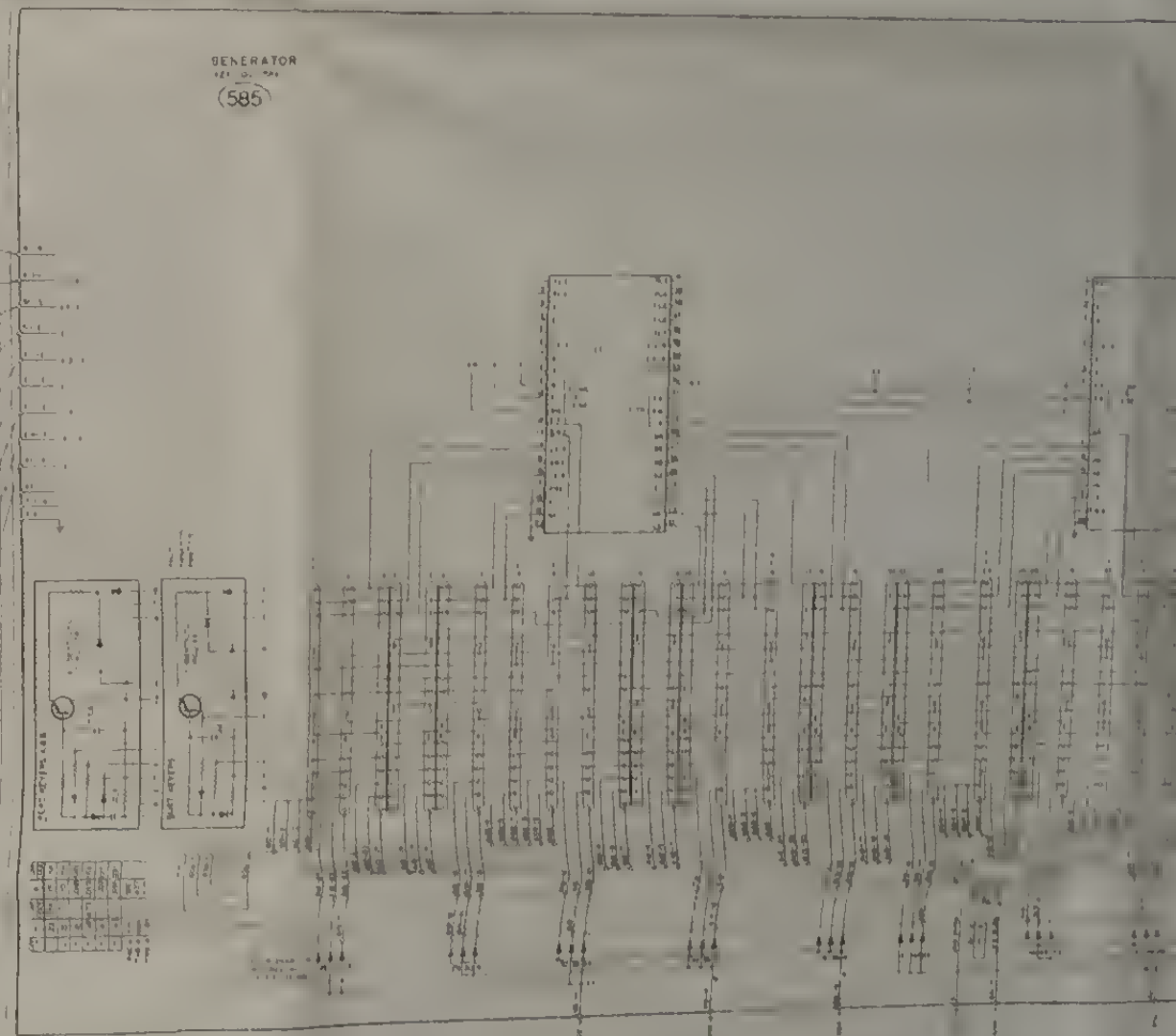
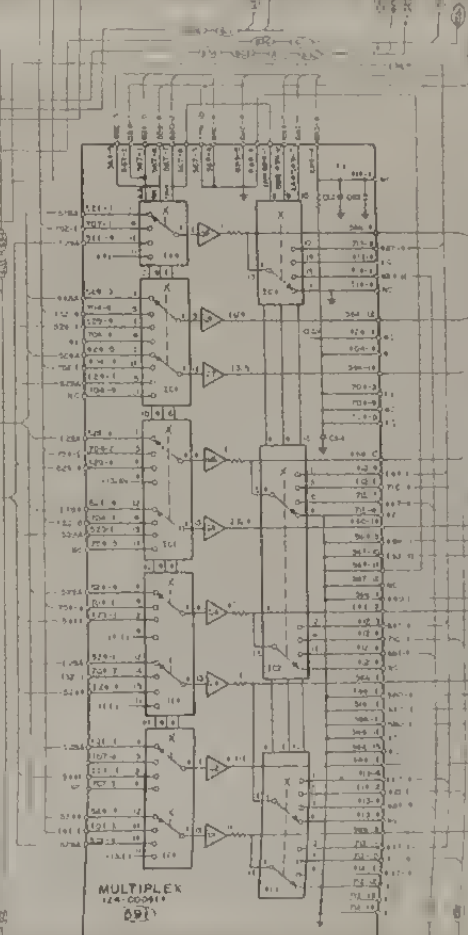
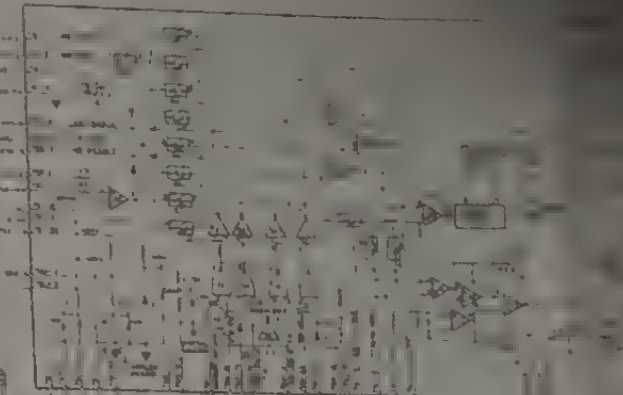
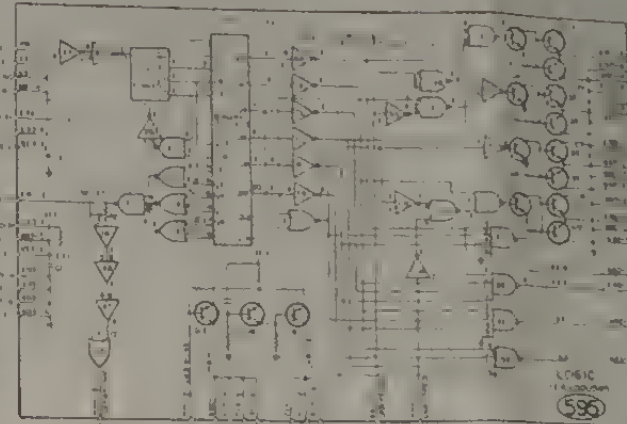
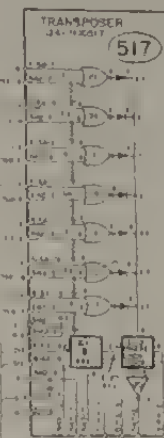
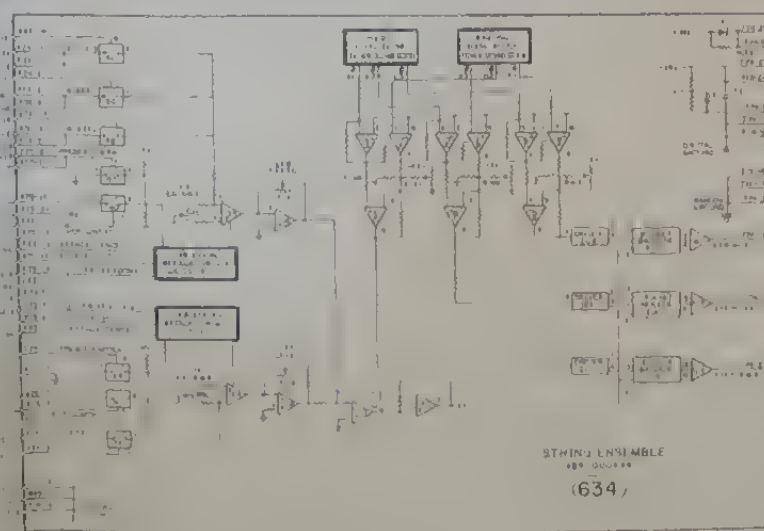
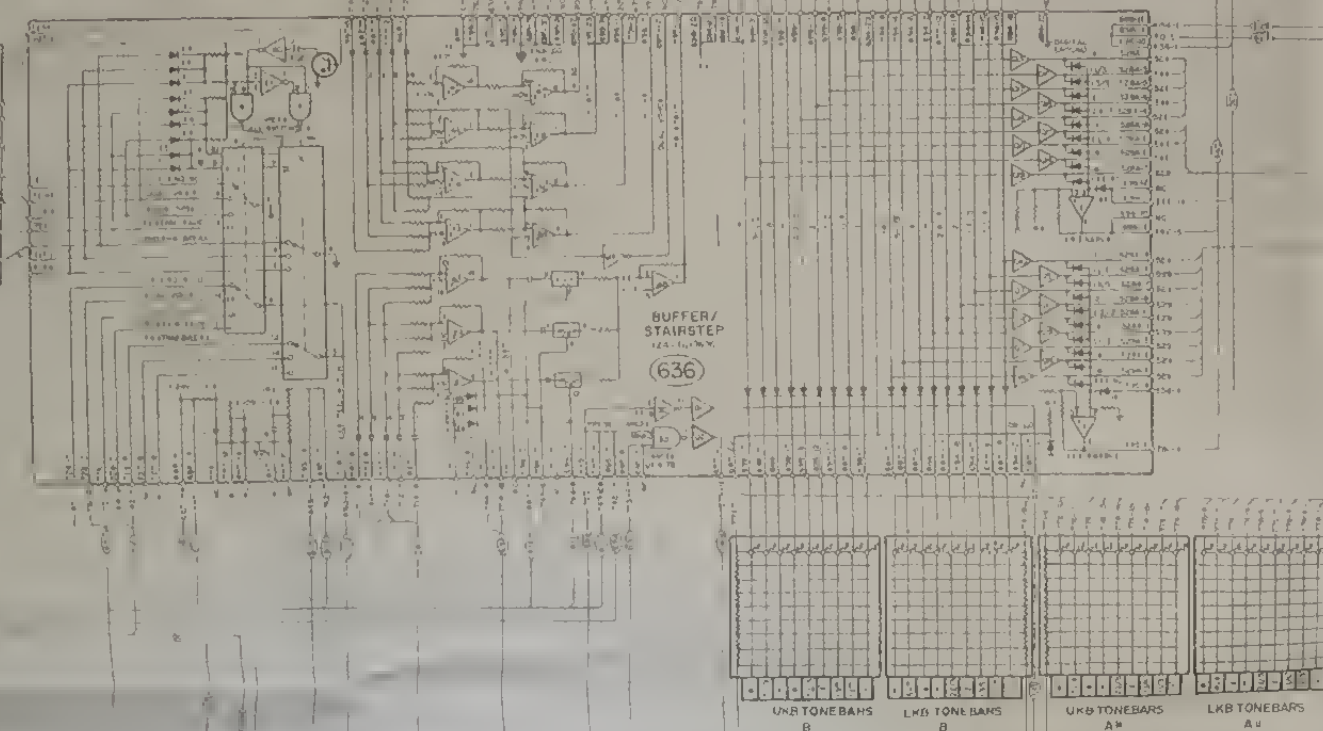
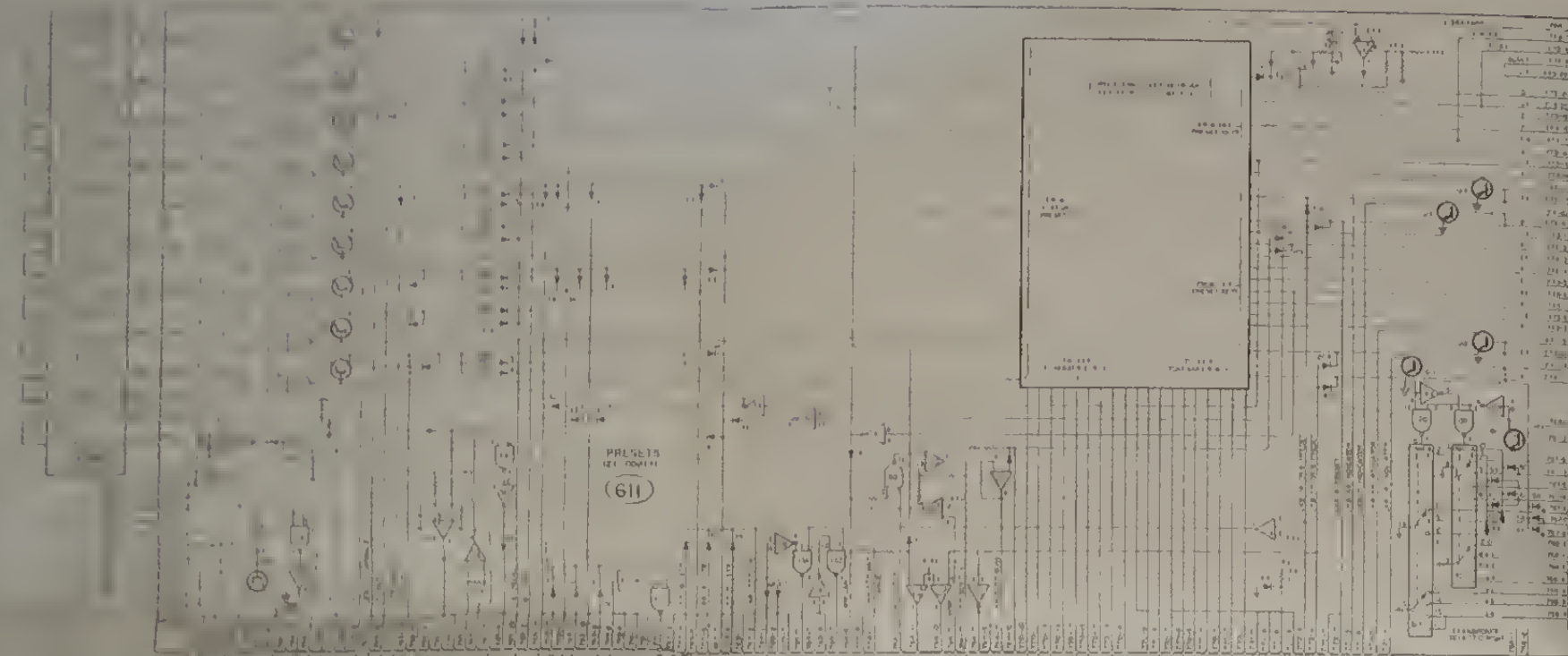
TEST AND ADJUSTMENT PROCEDURES

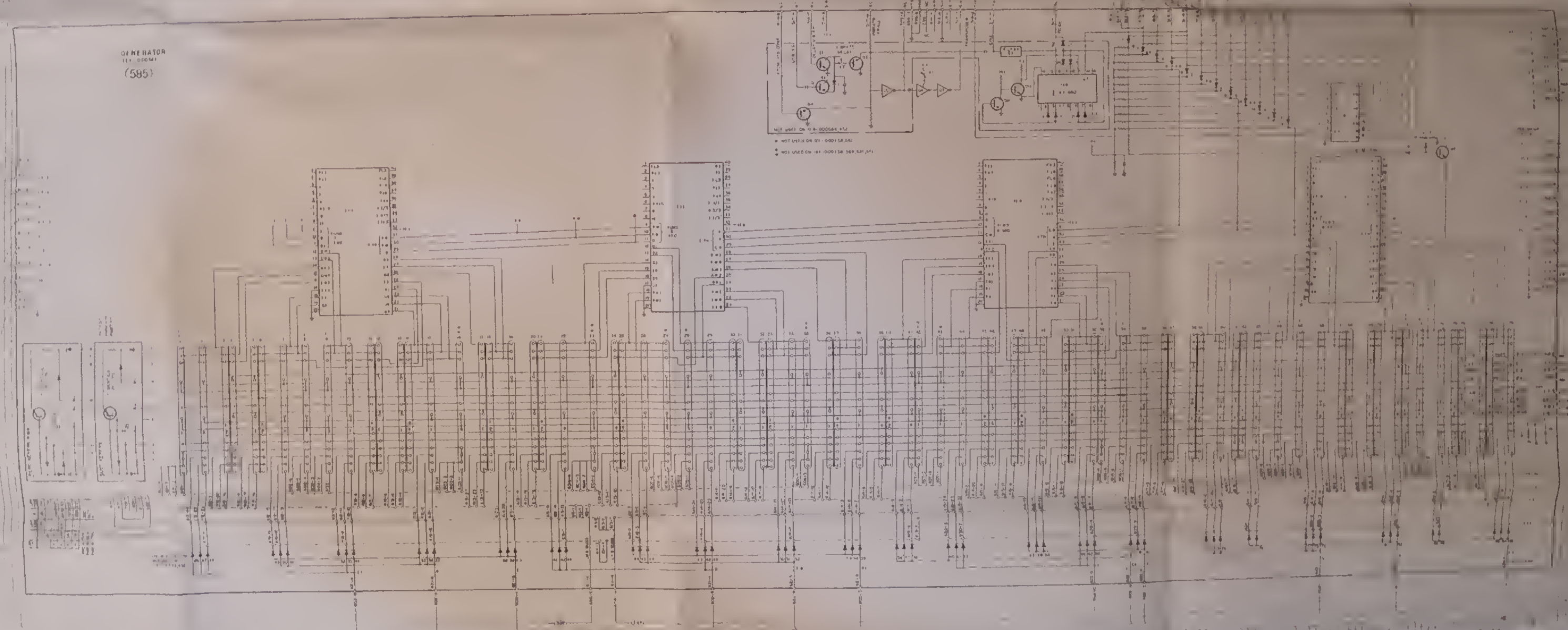
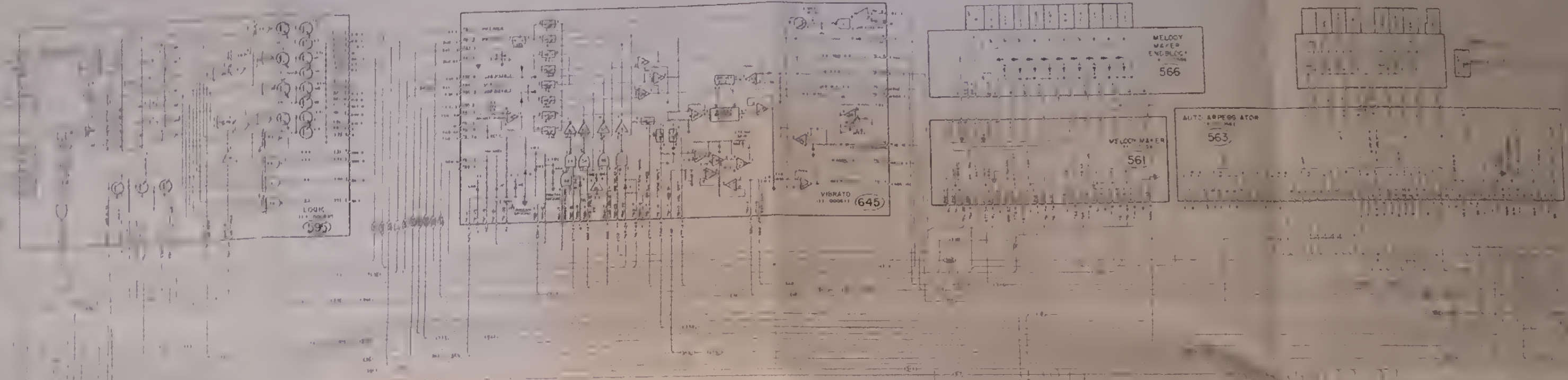
HAMMOND
Elegante

Logic & Control
Wiring Diagram

340207

340212 *Elegante*





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